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UNIVERSITY OF YAOUNDE I
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DOCTORAL RESEARCH AND TRAINING CENTRE (CRED) IN SOCIAL AND EDUCATIONAL SCIENCES

SOCIO-CULTURAL FACTORS AND GIRLS' ACCESS TO TECHNICAL AND VOCATIONAL EDUCATION, IN SOME SELECTED SCHOOLS IN BAMENDA MEZAM

Dissertation submitted in partial fulfillment of the requirements for the award of a
Master Degree (M.A.) in Sciences of Education and Educational Foundation.

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This work is dedicated to my parents

HALLESON David NGIDE and HANNAH Dione HALLESON (late)

and

My beloved niece Yvonne SONE ELEH (late)

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ABSTRACT

This study investigates the effects of socio-cultural factors on girls' access to technical industrial education at the secondary school level. The study was carried out in selected technical secondary schools in the northwest region of The Republic of Cameroon. When girls' access to technical industrial education is limited or hampered, it would mean that women participation in nation building will be lagging behind as far as technical know-how and application is concerned. Specifically, the study sets out to study the relationship between social stereotypes, parental attitudes and sociocultural practices and girls' access to technical industrial education.The theories that were used to support the findings of this study were the gender base schema theory, human capital theory, and career choice theory. The research methodology employed comprised of a combination of quantitative and qualitative techniques in data collection. Triangulation was preferred in other to enlarge information possibilities. From the stratified random sampling we obtained a sample size of 308 girls from which we collected the data. The statistical tool used in the analysis of the data was the Pearson correlation. Correlation analyses were carried out at three different levels and the following results were obtained.

RH1: Social stereotypes significantly correlate with girls' access to technical industrial education, $r(306) = 0.502$; $p < 0.001$

RH2: Parental attitudes significantly correlate with girls' access to technical industrial education, $r(306) = 0.425$; $p < 0.001$

RH3: Sociocultural practices significantly influence girls' access to technical industrial education, $r(306) = 0.240$; $p < 0.001$

Based on the results of the finding stated above, we discussed the findings using the gender schema theory of Bem (1981), the human capital theory of Becker (2005) and career choice theory. We conclude that socio-cultural factors have a strong influence on female access to technical industrial education at the secondary level. Given these results we have made recommendations to stake holders include; government, teachers, parents, female students and the community regarding girls' access to technical education.

Key words: socio-cultural factors, girls' access, technical and vocational education

RESUME

Cette étude examine les effets des facteurs socioculturels sur l'accès des filles à l'enseignement technique industriel au niveau du secondaire. L'étude a été réalisée dans les lycées techniques d'enseignement secondaire, sélectionnés dans la région nord-ouest. Lorsque l'accès des filles à l'enseignement technique industriel est limité ou entravée, cela signifie que la participation des jeunes filles dans la construction de la nation sera à la traîne pour ce qui est du savoir-faire et leur application technique. En particulier, l'étude vise à étudier la relation entre les stéréotypes sociaux, les attitudes parentales et les pratiques socioculturelles et l'accès des filles à l'enseignement technique industriel. Les théories qui ont servi à appuyer les discussions de cette étude étaient la théorie du schéma de base de l'égalité et la théorie du capital humain et la théorie des choix de carrière. L'approche méthodologique utilisée dans cette étude était la méthode mixte où questionnaire et guide d'entretien ont été utilisés. La technique d'échantillonnage utilisée était l'échantillonnage proportionnel. De l'échantillonnage aléatoire simple, nous avons obtenu une taille d'échantillon de 308 à partir de laquelle les données ont été obtenues. Nous avons utilisé le coefficient de correlation de Pearson comme outil statistique pour l'analyse des données. Des analyses de corrélation ont été effectuées et les résultats suivants ont été obtenus.

HR1: Les stéréotypes sociaux corrèlent significativement avec l'accès des filles à l'enseignement technique industriel, $r(306) = 0.502$; $p < 0.001$

HR2: Les attitudes parentales corrèlent significativement avec l'accès des filles à l'enseignement technique industriel, $r(306) = 0.452$; $p < 0.001$

HR3: Les pratiques socioculturelles influencent significativement l'accès des filles à l'enseignement technique industriel, $r(306) = 0.240$; $p < 0.001$

Les résultats ont été interprétés à l'aide de la théorie du schéma de base de l'égalité de Bem (1981), de la théorie des choix de carières et de la théorie du capital humain de Becker (2005) qui nous a permis de comprendre que les facteurs socioculturels ont une forte emprise sur l'orientation des jeunes filles dans l'enseignement technique industriel. Nous avons au terme de cette étude fait des recommandations selon laquelle l'Etat ou les décideurs de l'éducation doivent prendre en compte l'influence que les facteurs socioculturels jouent dans les perceptions des jeunes filles au moment d'opter pour l'enseignement technique industriel.

Mot clés : *facteurs socioculturels, accès des filles, éducation industrielle technique*

ACRONYMS

BEP: Brevet d" Etudes Professionelles

BT : Brevet Professionelles

CAP: Certicat d'Etudes Professionelles

CEDAW: Convention on the Elimination of All forms of Discrimination against Women.

CETIC : College Enseignement Technique Industriale et Commerciale

DRES: Regional Delegation of Secondary Education

EFA: Education for All

ENSET: Ecole Normal Supérieur d'Enseignement Technique

FAO: Food and Agricultural Organisation

FSLC: First School Leaving Certificate

GCE: General Certificate of Education (Ordinary and Advance Level)

GCET: General Certificate of Education Technical (Ordinary and Advanced Level).

GPHC: General Population and Housing Census

GTC: Government Technical College

GTC: Government Technical College

GTHS: Government Technical High School

GTHS: Government Technical High School

HIV/AIDS: Human Immune Virus/ Acquired Immune Deficiency Syndrome

ICT : Information, Communication Technology

LT : Lycée Technique

MINESEC: Ministry of Secondary Education

MINETFOP: Ministry of Technical Education and Professional Training

NEF: National Employment Fund

NIS : National Institute of Statistics

OECD: Organisation forEconomic Co-operation and Development

PTA : Parents Teacher's Association

STDs: Sexually Transmitted Diseases

STEM: Science, Technology, Engineering and Mathematics

RSA : Royal Society Of Arts

TVET: Technical and Vocational Education and Training

UN: United Nations

UNDP: United Nations Development Programme

UNESCO: United Nations Education Scientific and Cultural Organisation

UNIGEI: United Nations Girls Education Initiative

UNMGD: United Nations Millennium Development Goals

WHO: World Health Organisation

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GENERAL INTRODUCTION

The challenges of industrialisation and technological development are global issues that may questioned the appropriateness of our educational system and the demand for education. The working world is changing rapidly and school orientation should be concerned with the preparation of young people for work life and occupational choice. Schools should develop human capabilities that would match the labour market needs and opportunities. To align education with the perceived requirements of the work environment; the curriculum drivers highly recommended are technology, science, engineering, and mathematics (Skilbeck et al, 1994; UNESCO, 1999). These are options responsible for infrastructural and socio-economic transformation. They offer huge labour market opportunities for youth and adultemployment as well as valorize a country's potential both in its human and material resources. Technical and vocational education is one of these drivers reputed for nation building and especially important in managing the flow of pupils graduating from primary schools (Che, 2010).TVE provides multiple path ways for students into the world of work. It is important for passing on cultural craftsmanship and values, developing critical thinking (minds), training in specialised skills, and rural development (UNESCO, 2004).

In the 1994 Orientation Law on Education in Cameroon, technical and vocational education has been reputed as the master key for sustainable development owing to its readiness in work orientation. In recent times, several educational forums have accorded technical education a top priority with the emphasis on professionalization and the development of a skilled manpower for Emergence 2035. Despite this profound recognition, skilled training has not been given a priority position in our educational dispensations. It is plagued with many hindrances such as; hostile economic environment, lack of teachers in quality and quantity, inadequate infrastructure, obsolete equipment, poor relationship between the system and the socio-professional milieu, archaic curriculum, lack of relevant textbooks and the inflexible gender attitude in selecting trades, just to name but a few. In relation to gender attitude in enrolment which is our focus, traditional perception of appropriate roles for men and women in the work place need to be challenged. Technical and vocational Education must respond with gender-inclusive learning programme, both in content and delivery including measures to attract women into previously dominated male training and careers and vice versa. Faculty need to be gender-sensitive (UNESCO, 1996).

With industrialization and technological development, girls can no longer rely on their traditional limited range of opportunities. Most occupations will be technological inclined and

unless girls acquire the necessary skills, they cannot access them. For women to be technological relevant, they must move towards this new knowledge. Women's poverty has been linked to the kind of jobs they do stemming from their education.Jobs that take much energy, effort and time but pays less (UNDP, 2010). Also, many of society's problems are best solved by the application of technology. For these discoveries to be useful, they need to be adopted and adapted to a majority of the population. Women owing to their majority population and other strengths, their increased participation in these areas can bring about improve wellbeing and also facilitate the building of a skill culture in the present and future generations of Africa children. The education of girls in nontraditional option is essential to the achievement of quality learning environment in the 21st Century.

Low general enrolment in TVE signals stagnation and an overall poor public training capacity. The African Union's Agenda of 2063 vision and an approach calls for a paradigm shift. It envisage an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global era. To achieve this it seeks to develop a human capitals grounded in knowledge and reputed in skill performance as well as valorize values such as passion for Pan Africanism, sense of unity, self-reliance, integration and solidarity. Education in science, mathematics, engineering and technology are pivotal to achieve Agenda 2063. Parity in all fields of education and youth representation in all cycles are measures to ensure a positive socio-economic transformation in the next fifty years. In this pursuit TVET has been remarked as a panacea for development which will reduce poverty, accelerate industrialization, enhance good governance, promote social peace and stability and achieve economic progress. Thus, as inroads towards planet 50-50 by 2030 women representation in engineering education is a call for concern.

In the international scene, the United Nations and its specialized agencies; UNESCO, UNIGEI, World Bank, UNDP, and so on are devoting huge material and human resources to raise awareness especially on Sub-African states to increase their participation in technical education. Sub-Sahara Africa countries register remarkable low rates in skilled manpower and according to the World Economic Forum 2014 Cameroon was ranked 121 out of 148 in skilled labour (OECD, 2014). This signals a situation of acute shortage in skilled labour which is not healthy for the 2035 economic emergence. Economic emergence presupposes industrialisation and this demands a huge skilled labour force comprising men and women who can harness the rich natural resources of the nation for production of goods and services

for quality livelihood. A sure way to acquire a qualitative and quantitative skilled work force is through quality and gender inclusive technical and vocational education.

The main objective of this research is to study the influence of sociocultural factors on female access to technical education in Mezam division. To achieve this, we used the gender schema theory of Bem (1981) and the human capital theory of Becker (2005). Based on previous empirical research, we generated a main research hypothesis and three research hypotheses. The general research hypothesis was formulated as follow : there exist a significant correlation between sociocultural factors and female access to technical industrial education in Mezam. This study is divided into five chapters.

Chapter one presents the research problem, the research objectives, questions and hypotheses. It also includes the significance of research, delimitation of study and the definition of key concepts. Chapter two deals with the review of literature related to the problem under investigation and elabores on the theoretical framework we used in this study. Chapter three is concerned with the methodology used in the research work. It presents the research design, population and sample of study, sampling techniques, instruments and data collection plan, data analysis method and a recapitulative table including variable and indicators of study. In chapter four we organises the data and presents our results and describes them. Chapter five deals interpretation of results and discussion of findings.

CHAPTER ONE
STATEMENT OF THE PROBLEM

Introduction

Chapter one is devoted to the study of the research problem which comprises; the statement of the problem, the research questions, the objectives and hypotheses of the study. It also looks at the delimitation of the study and the definition of the concepts.

1.1. Background to the Study

Technical and vocational education in Cameroon as a component of formal education was introduced as far back in 1947 by the French colonial administration. The purpose was to enable Africans acquire skills that would enable them participate in the construction of roads, railways, plantations, buildings, bridges and so no. Thus carpenters, mechanics, brick layers, iron benders, plumbers and so no were trained. This was an expansion of the indigenous craftsmanship of the blacksmith who was/is responsible for the production of agriculture tools, the potter for utensils, weavers for basket and roofing covering, the builders for construction of houses and so on. During that time formation was based strictly on gender role; boys were oriented in the industrial trades and girls for the vocational home economics. The separation of industrial and home economics education showed a pattern that conformed to traditional education (Fonkeng, 2007). It was not conceivable at that time to think of a woman as a technician. A technician was considered a male who could repair mechanical or electronic devices or products; turn screws, bolts and nuts (Ajayi, et al., 2011). Over five decades since independence and coupled with the tenants of globalization, it is absurd to hold on to this pattern of enrolment yet attitudes have hardly changed and this practice is still on-going.

Technical and Vocational education is a people centered kind of education that is able to provide employment to all individuals for the development of their communities especially in the rural areas (Bowles & Gintis, 1976). According to South-South Study (2010) the new objective for technical and vocational education for Cameroon and owing to its vast rural occupation of about 75 percent includes;

- Improve access to training. It target to increase the number of enrollees to 150000 by 2015 and have at least one excellent vocational training centre per division.
- Better integrate the technical and vocational streams into the overall educational system.

- Build and renovate technical and vocational training centres.
- Strengthen the link between TVET and the labour market.
- Develop programs using skill base approach.
- Increase funding for Technical and vocational training.

Considering the importance of these objectives which sets out to develop human resource and strengthen their link with the labour market, TVE is an important education that should not be viewed as more suitable for a particular gender than the other. Rather the total human resource capital of a nation need to be develop in ways that will facilitate their insertion into the socio professional life for optimum benefit to the community. Skill training is a prerequisite for industrialization and has been and is still the major player in the development of advanced economies such as Europe, America, and Asia. Unfortunate for Africa and Cameroon in particular our colonial fathers forgot to introduce this type of education or did so in the most derogatory manner so as to make Africa dependent on the metropolis (Fonkeng, 2007). While in the metropolis technical education was making progress in challenging development, in Africa outdated medieval arts and literature was the main focus of the educational system to produce bureaucrats who will take up offices in the colonial administration. This is the first false step of in attaining development for African- the neglect of technical education. White collar job was considered more important than the "blue jacket" job and as such, the admiration of every parent was to enroll children in the grammar education options that will place them in the public service.

Girls and women have been on the front line as far as equality in education is concern. Parity in education has been accepted as a fundamental principle of Human Rights and an adequate measure to achieve equality (MDG 3, 2001). The 1945 UN Charter and many other declarations of both international and national recognition have in recent times urge governments to see the need to narrow the gap between men and women as a development goal. Where women cannot afford equal rights as men then they cannot achieve development in a sustainable way (UNFPA, 2006). The 1997, UNDP Human Development Report asserted that the starting point for poverty eradication is to empower men and women and to ensure their participation in decisions that affects their lives. In this technologically driven era such empowerment should extend to include girls and women on the same footing with their male counterpart in all spheres of education. Regrettably there still exist areas where women are highly underrepresented. According to the Scientific, Technical and Vocational Education for Girls in Africa (1997) report noted that girls in Africa feature very insignificant in science,

technology, engineering and mathematics (STEM) courses and programmes. It believes that in a world increasingly shaped by science and technology, scientific and technological literacy is a universal requirement. It is vital to improve scientific and technological literacy among women and girls, whose unique educational function within the family makes them such a major determinant of attitude of present and future generations' STEM Education is therefore the basis for the full promotion of and improvement of the status of women (Nairobi Looking Forward Strategies, 1985).

Women and girls have attained some acceptable level in formal education owing to the international requirement of free and compulsory primary education (UN 1945 Charter on Human Right, EFA.1996, Beijng.1994, MDG. 2000). This, not withstanding, women need more than to know how to read and write. They need to be equipped with relevant knowledge and skills that industrialisation demands. Unfortunately, there still exist huge barriers (early marriage, early pregnancy, heavy domestic chores, male preference, girls' economic role, child labour...) that hinder female access to technologically driven education. Women who donot attain school cannot enroll in industrial technical and as a consequent low enrollment is evident in this aspect. No country can attain industrialisation if its potential labour force is not skilled oriented qualitatively and quantitatively sufficient. UNESCO (2010) recommends at least 200 scientists and 250 engineers per million people for effective industrialization in Africa. If this has to be true for Cameroon it is important then to raise awareness on the danger of leaving out women in this very important aspect of education.

Women and girls constitute more than half of the population of most nations and are important vessels to acquire this knowledge and then transmit it even unto their children (Beijing, 1995). It is therefore, essential to make Hands–on education a functional reality for every woman. Mustapha (1999) asserted that the grooming of individuals in skill performance has been recognized as a major area to increase workers productivity, create wealth and alleviate poverty. Cameroon, on its part in 1995 organised a National Education Forum to correct the mistake of an over indulgence into academic education and adapted an educational Orientation law which laid down new guide lines for the technical education objectives as follows.

- Create institutional conditions for an effective vocational training system.
- Improve job marching and facilitate the transmission from training to employment

Given the importance of these objectives, technical and vocational skills should not be the prerogative of a particular gender; the democratic participation of all should be encouraged. Access for girls into technical industrial fields leading to engineering professions such as electrical, mechanical and civil engineering should be encouraged through suppressing factors that hinder access.

1.1.1. Conceptual Framework

Equality between men and women is a top priority on international debates as a development goal and a tool for social progress, CEDAW (1979), World Conference on Human Rights (1993), Millennium Development Goals (2000) and so on. Education is considered on all platforms as an essential tool to obtain equal and full participation of women in development, to promote and improve on the status of women and to valorised the contributions of women. The status quo of women need to be valorised beyond ordinary literacy to functional and pragmatic literacy that will increase livelihood and promote welfare. One of such important placement is in technical industrial education were female representation has the highest pitfall UNESCO (1999). Che Kum (2010) suggests that owing to the fast development and the sea of changes taking place in the field of technology today, it is imperative for us to take drastic steps and adopt the changes in educational strategy, in curriculum and as well as in industrial technology to remain in the line with the other advanced countries. If we remain aloof these changes we will lag behind countries and also we will not be able to compete in the world market in industrial product.

Skill oriented base education is less thought of as a vital area for women to develop their potentials and contribute to the development of their communities. Female education has been centered chiefly in equipping women with knowledge, skills and attitude to perform their traditional role of good wife and mother. This has led to the saturation of girls' enrolment in grammar school. Human resource development for women has been mainly knowledge focus. This has placed the women in a less advantageous situation in the current labour market which is technological driven. The prevalence of this situation is likely to plunged women in situation of increase unemployment because the jobs of their educational orientations may be in less demand. Ironically, the public image associated with technical education in Cameroon is not beneficial to enrolment in general and female in particular. The society has often had a negative view on skill education as an education for the less intellectually endowed, children of poor parents, less educated and is often associated with servitude (Megan, 2002; Carrefour de l'éducation, 2004). These perceptions many researchers support stems as far back as colonial era which compared manual work to servitude and has

led to a situation where according to The World Economic Forum (2014) Cameroon was ranked 121 out of 148 in skilled labour.

According to the World Bank report (2012) on attaining gender equality and development, three challenges were identified which if eradicated will move the future of girls' education. They include; reducing segregation in the field of study especially in STEM; improving learning outcome and addressing the need of severely disadvantaged populations. Reducing gender segregation in STEM will involves also valorizing technical education as a whole including attracting females in male dominated industrial technical fields such as Civil Engineering, Mechanical Engineering, and Electrical Engineering. The Education for All (1995) initiative is to reduce the gap between girls and boys enrolment rate. UNIGEF Medium-Term Strategy (1996-2006) noted that the respect for traditional gender role in occupational orientation was a remarkable cause of setback on female job opportunity and the progress of society as a whole. To solve this, requires a change mentality from the aged long "white collar" mentality to a technological mind frame. The youths are pivotal in this drive, to this Che Kum (2010) believes that, this process of change can be accelerated if measures are taken to imbibe in our youths the qualities like enthusiasm for life-long learning, critical thinking, eagerness to accept challenges of new situations and new problems, positive flexible habits to change besides providing knowledge, specific skills and habits for work.

The provision of employment is a central aim of education. High skilled, high paid jobs are associated with Technical and Vocational education and should be an attraction to parents and students alike. However this is not so, the national enrolment of TVE covers less than 30 percent of students' enrolments in secondary education over the years. For example, the national students' enrolment for the academic year 2010\2011 for example was 321,859 students for technical and vocational education as against 1,252,592 students for grammar education; representing 27.69 percent and 62.21 percent respectively. (MINESEC, 2011; UNESCO, 2011).This situation is not only unhealthy for a country that envisaged economy emergence by 2035 but also is frustrating on the country's vision of poverty alleviation through job creation and economic progress if this dichotomy is maintained. In this light, the concentration on mental and the theoretical exercises rather than manual and practical experiences has prepared most students for neither job, nor family, nor responsibilities of citizenship (Simon, 1999).

Youth unemployment in Cameroon is a menace for social peace and economic progress. According to the National Employment Fund report (April, 2014), youth

unemployment is about 30 percent. The problem is in multiple facets including the reluctance of youths to accept hands-on education and training, poor work attitude and the increase desire in leisure and entertainment as oppose to work, Loitering culture leading drug abuse, high alcohol consumption, money laundry, scamming and other related crimes. This is huge waste on human resources to have educated youths who spend their time on nothing productive. The causes may be many but a wrong type of education is a major concern. In a predominant agricultural country, a dominant grammar education orientation will do less than produce humans who cannot harness the country's resources. Grammar education graduates job seekers not job makers; while technical education economic movers who are able to create jobs for themselves and others.

There is no doubt that education empowers but to inculcate the fact that it should formerly provide a job (especially by the state) at the end is misleading and accounts for the reason why huge numbers register yearly for public examinations and only a very few succeed, thus deepening the frustration of school graduates and their parents. Despite these unpleasant results parents continue to cherish the hope and aspiration of university education that leads to high positions jobs in the administration. The consequence is a prejudice against and a less positive image for technical education.

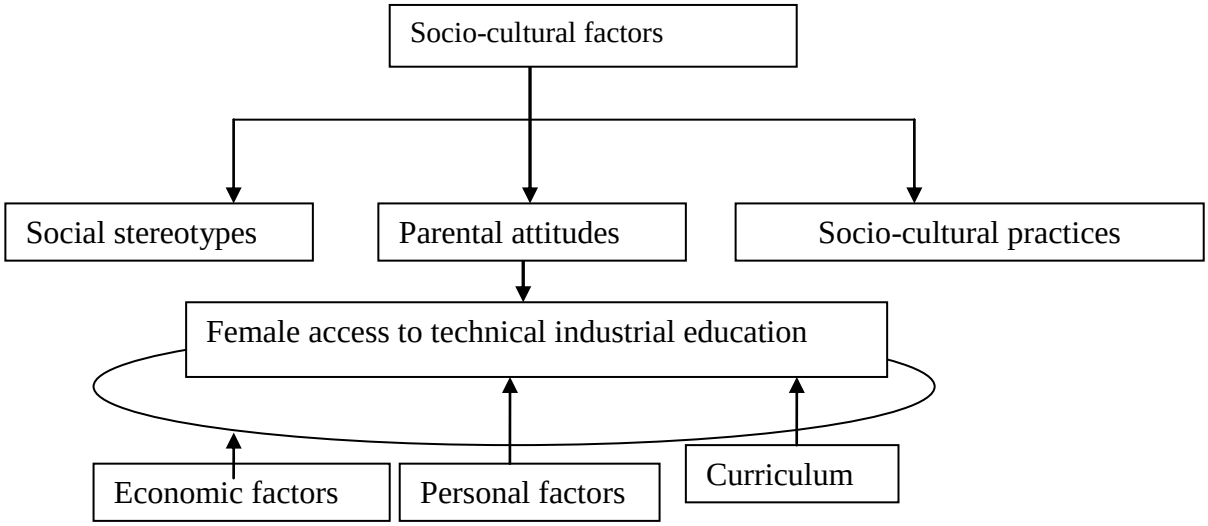
The political will to bring Technical and Vocational Education in the limelight has been too slow. As evident in public life in Cameroon graduates of grammar education hold leading positions even in technical based areas. The entrance examinations into technical institutions of higher learning base on languages and mathematics operates to give grammar education graduates greater opportunities. The case of ENSET is alarming where many of the students' teachers are GCE Advance Level and Degree holders. This phenomenon produces high grade but less technically qualified teachers who have neither learned nor acquired skills to pass onto students. This is disturbing coupled with the other short comings such as; reduced number of technical colleges, poorly equipped workshops and laboratories, obsolete equipment, inadequate infrastructures, irrelevant curriculum, lack of teachers, few technical teacher training colleges and a the lack of an open door policy to enter university for technical education (Megan, 2009; Carrefour of education, 2013). Technical education is therefore viewed by many as a dead end. Also enrolment deficiencies and gender disparities are pressing issues in the TVET sector that need to be resolved. To prepare students to acquire the knowledge and skills needed in the increasingly sophisticated world, technical education must be revitalised in all spheres including; relevant curriculum to social realities, innovative

text books, quality teacher training, productive teaching and infrastructure and connection between industries and technical institution (Che, 2010)

For far too long, the Cameroonian people have been ill-advised that technical education is inferior and second-hand, yet all industrialized economies (US, Germany, Singapore, France, China and others) have had to rely on this type of education for their advancement. True emergence will begin by challenging the poor public conceptions about TVE and inculcating in the youth the love of self-reliance, and the emergence of an entrepreneurial class which will reduce dependence on employment in the public sector. TVE is the rightful education that will harness the natural potentials and advances economic, social and cultural development in a competitive environment UNESCO (2010). Rejecting TVE and the perpetuation of gender base discrimination in certain fields of specialization will not only increase youth unemployment, but will also drain the country's resources through the employment of expatriates to fill the gap created by gender discrimination.

Research in girls' education exposed the following unpleasant revelations contributed by socio-cultural, economic and religious factors, they include ; non-schooling, early withdrawal from schools, withdrawal caused by early marriages, parents preference for male child education over females, low performance, stereotyped against certain knowledge and skills. (UNESCO, 1998; Beijing 1995; UNMDG, 2001). A combination of factors occurring at home, on the way to school, in school and in the community at large have culminated to hold back women's and girl's contributions to the development of their community. This study is aimed at unrevealing these factors on that path way of women's progress.

Figure 1.1: Representation of conceptual framework



1.1.2. Contextual Background

Cameroon like most countries of the world is affected by the trend of globalization fueled by technology. In respond to trend the government of Cameroon envisage economic emergence by 2035. This implies changes in the socio-economic trend that will include among other things the need to increase skilled manpower to pave the way for industrialization. With a population of about 21.1 million people comprising 51 percent women and having 60 percent of this population is under 30 years with 43 percent below 15 years (NIS, 2013), this indicates that the country has a vibrant youthful population that can harness the rich natural resources of the nation and bring about the expected changes even before 2035.

Environmentally, Cameroon is often referred to as 'Africa in miniature' because of its rich ecological zones ranging from the Sahara Desert in the north to the equatorial forest in the south. Cameroon enjoys all the vegetation and climatic types found elsewhere on the continent (Carrefour d'Education, 2010, p5). Culturally, it is a mosaic of differing cultures, languages and religions united through the events of colonial history. There exist great diversity of traditional attitudes as a consequence of the varied human responses and adaptations to their respective locality of settlement and philosophies. There are approximately 243 identified local languages, corresponding to the 243 ethnic groups and autonomous cultures of people in their own rights. The official languages are French and English inherited from their colonial masters, a main factor that accounts for its bilingual nature on which the educational system operates. Its main economic activity is agriculture which employs about 70% of its population (NIS, 2011). Women and girls are the majority in this sector operating either as cash crops farmers or petty traders in agricultural products.

Developmentally, according to The World Economic Forum, Cameroon is considered as a factor driven economy which is the first stage of development in the industrialization process. The other stages are Efficiency-driven and Innovation-driven. Between 2011 to 2014 Cameroon has been ranked 121 out of 148 in terms of technological readiness. This shows that there exists serious deficiency in skilled workforce to harness the rich potential in natural resources. Factor driven economy is skilled labour intensive and as such this signals the urgent need to revamp TVE both in the formal and informal sectors so as increase skill labour force in which Cameroon has the greatest pitfall. Ironically, on the whole, TVE is the most neglected education option over the decades evident in low enrolment, lack adequate policies on public sensitization, strategies and insufficient resource allocation (World Bank, 2013).

Occupationally, according to the UNDP (2010), report reveals that women and girls constitute about 80% of the labour force in the informal sector and about 20% in the formal sector where the civil service is the main employer. Here, they are mainly in service related jobs such as; teachers of primary and secondary schools, secretaries, clerks, nurse and so on. High executive functions are mostly occupied by their male counterpart. Female employment is a reflection of their education that portrays a deficiency in quality training and limitations in career orientations and the persistence of traditional gender base education.

Educationally, Cameroon has one of the best schooling and literacy rates in Black Africa (UNESCO, 2013). The UN Millennium Development Goals have had an enormous impact on basic education in Cameroon registering about 97 percent enrolment – the highest in the sub-region (UNESCO, 2013). Literacy rates for the 15-26 years age group is 72 percent for boys and 59 percent for girls. This disparity can be explained in part by families' decision to favour secondary education of boys if the financial resources do not permit sending all children to school. Although, some attempts have been made by government to promote girls access to education there remains fewer girls than boys in secondary and tertiary education representing 47.81 percent and 36.57 percent respectively (UNESCO, 2011). Girls are especially affected by socio- cultural factors that determine the behaviour and choices of parents and pupils towards educational goals. Also factors such as; lack of infrastructure, educational materials, shortage of qualified teachers, long distances between home and school and so on still plagues the educational sector.

Socio-cultural values that evolve around girls are strong forces that affect female outlook on life as a whole and education in particular. In North West region like in the majority of the cultures in Cameroon, the society operates within the ethos of traditionally

cultural norm and practices in which the male gain distinct patriarchal privileges (Ngassa, 2009). Women are generally viewed as family liability than assets as they are supposed to be married and bear children. They are treated as 'sex objects', fit only to be domesticated and used as 'show piece' in fairs and festivals taking place in the community (Ngassa, 2009). They are involved in social decision cycles mostly when the subject is on food and entertainment. The perceived female gender role of mother and wife are strong determinants in our society where male chauvinism characterized family life. Because of this marriage centered socio-cultural values and the aesthetics role that women play there are very few forces that are conducive to the education of girls and women.

The dominant male culture is x-rayed through several cultural practices and customs such as early marriage, polygamy, early pregnancy, female child labour, sexual harassment, male preference (especially when resources are limited), female circumcision, wife battering, and heavy domestic chores burden borne by female. The mothers' tasks of farm labour, care of siblings, food preparation, petty trading and so on which girls usually assist in, are both time and energy consuming leaving girls with limited time to do school work and where the pressure is more they may be withdrawn from school (Ngassa, 2009). The physical, emotional and social violence done on women and girls constitute real road blocks on women's progress affecting their access to and participation in education in general and technical industrial education in particular. Education is empowering but these adverse conditions on females produce unpleasant results including; non schooling, early withdrawal from school, low performance, limited areas for specialisation, and phobia to attempts the STEM productive careers. In the rural as well as in urban areas, girls economic value remain high as their bride price constitute a valuable source of income, money which is used sometimes to pay school fees for the boy (Ngassa, 2008).

The general attitude of society towards women is non supportive in areas considered male prerogative (Boer, 1988). Cultural and religious beliefs that unquestionably sets, the man as the head of the family and places the woman under his authority attempts to reinforce this belief through differences in occupations. There are jobs for men and women. Women's emancipation that advocates gender equality to opportunity is not yet wholesomely applicable. For example, technical skill training is still the preserve for men. It is as if the involvement of women in the studies and work place of technical education careers will threaten the male of the strength, vigour, might and their intellectual exuberance. This indicates that men are rather uncomfortable with any move that threatens the patriarchal status quo and as such will neither sponsor nor encourage women in technical industrial careers.

Consequently, the study and work place of technical industrial options are stereotyped against women.

1.2. Statement of the Research Problem

Attempts to valorise technical and vocational education so that it is gender inclusive in all trades was reinforced in Cameroon by the Education Orientation laws of 1996 as a follow up towards equal demand of education for boys and girls in this domain. In this light, many reforms have been implemented in the direction of school planting, curriculum and teachers' development, textbooks and so on. Though not sufficient when compared with the changing times it is at least laudable. Every Sub Division has at least a Government Technical College (GTC) and at least a Government Technical High School (GTHS) in every Division (MINESEC, 2012). In relation to curriculum development, there is a continuous expansion on options offered in technical colleges. For example, in GTHS Bamenda the number of industrial options have increased from eight (8) in 2010/2011 to eleven (11) options in 2014/2015. On teachers' development programme, the number of higher technical teachers' training colleges has increased from one to three (ENSET Douala, Bamenda and Kumba). Despite the efforts devoted to valorise TVE in Cameroon, there still exist a variety of problems plaguing the sector remarkably is the wide disparities in the demand of technical industrial education by boys and girls.

Female access to educational opportunity is a call for concern generally as education holds the key to female empowerment and poverty alleviation which has a direct positive impact on the welfare of the family. Thus a remarkable low participation of female in education could affect these attainments. Employment is closely linked to the level and type of educational orientation. Today we are slammed with an alarming unemployment rate of 30 percent in Cameroon (National Employment Fund, 2014). Educated youths constitute a greater proportion of the unemployed and females make up 19.7 percent (NIS, 2013). This phenomenon is quite disturbing and remains a huge challenge to the educational system that seeks to provide long life learning. The national focus should be towards minimising the incidence of unemployment. Technical and vocational education is one of the sure ways to minimise human resource wastage through providing individuals with skills which they can employ in either a paid job or self-employment.

Though it is topping seminars and workshop debates in recent times, technical and vocational education is still not quite popular. Not only is the general enrolment low but it is also highly gender unequal with male dominance in industrial technical as well as total

enrolment. More to this is the tendency of options specialisation to reflect traditional gender roles where technical industrial trades are for boys and "soft options" such as Secretarial Studies, Home Economics are for girls. For example, in GTHS Bamenda, the students' enrolment for 2014/2015 was 1,688 students, 1194 students offered technical industrial and of this number only 30 are girls, representing 2.5 percent (Dress Making not included). This has been the trend over ten years. In GTHS Alabukam, the students' enrolment offering technical industrial in the both levels was 856 students and of this number only 4 students are girls, representing 0.46 percent. In GTHS Nkwen offering 12 specialities in the first cycle and 6 in the second cycle only 439 girls are enrolled in a total school population of 2453 students representing 17.89 percent. Enrolment according to gender role options revealed that girls dominate in home economics, clothing industry and secretariat options. These statistics reveal that many boys demand for TVE than girls and that gender role specialisation is still very high. Also female teachers of technical industrial are very few and are non-existence in some schools. Their presence could serve as role models for the girls and encourage enrolment.

Female reluctance to enroll in non-traditional options is a continuous challenge to all educational stakeholders. This affirmed the assertion that occupations are gender stereotypes (Tchombe, 2007, Matchinda, 2008). This means there is "male" and "female" adequacy in career orientation perpetuated by a subtle but penetrative gender male practices. The persistence of this notion has led to a situation where technical industrial education seems to be barred against girls, registering very low national enrolment rate 3.5 percent and 2.3 retention rate over several years (MINESEC, 2013). This signifies that 97 percent of females in Cameroon are technically illiterate. That is girls who cannot turn screws, nuts and bolts, or simply wear the 'blue jacket'. This is reflected in their socio professional life and has perpetuated a culture of lack of role models. Social stereotypes, parental influence and sociocultural practices could be amongst the factors affecting female access to technical industrial education.

Rowe (1978) announced that just being female was a 'special handicap' in science, mathematics, engineering and technology. Girls are believed to know less, do less, explore less, and are presented to be more delicate than boys. While not minimising on female traditional gender trades, it is necessary for females to diversify their educational orientations in order to increase their employment opportunities in today's highly skilled related labour market. Skills such as metal work, woodwork, construction, electricity, and so on are all necessary for students to compete for employment positions in the 2035 emergence plan.

Therefore, maintaining this enrolment pattern will have serious consequences on girls and could have an effect or even retard the attainment of vision 2035.

In the 21st century all individuals need to possess some problem solving skill. Though most of the industrial domains are male dominant, there are still some girls who choose to enroll in a male dominated specialization. It has been observed that these girls, who orientate themselves in the industrial domains, do perform better than most boys. It would be interesting to investigate not only the factors that serve as barriers for girls enrolment in industrial options, but also, how those girls who enroll cope with their studies and the environment. For the factors that create these barriers cannot be ignored especially as the euphoria of technical industrial education for girls seems to be dying down slowly but surely. When girls do not acquire technical industrial skills, it implies that their participation in the nations development will be wanting; and as such bring stagnation in the socio-economic progress of the society. Also, limited access of girls to industrial education would also mean that the objectives of equal opportunity and empowerment of women and emancipation have not been attained and the huge resources injected in such a venture were wasted. Industrialisation is one of the main keys to society's sustainable development and if girls are not involved in the acquisition of competences that would enable them to participate in the industrial program, it would mean that the emergency by 2035 remains bleak and poverty would never be eradicated. It is against this backdrop that we want to study the various socio-cultural aspects that influence female access to technical- industrial education in Cameroon.

This study will investigate the effects of sociocultural factors on female access to technical industrial education. The investigation will be conducted in three government technical high schools in the Mezam division in the North-West region of Cameroon. The present study, using a mixed-method approach, within the context of technical secondary schools, will be concerned with the following research question: To what extent do sociocultural factors affect female access to technical industrial education?

1.3. Research Questions

1.3.1. Main Research Question

To what extent do socio-cultural factors affect female access to technical industrial education?

1.3.2. Specific Research Questions

- What impact do social stereotypes have on female access to technical industrial education?

- What influence do parent attitudes have on female access to technical industrial education?
- What effect has sociocultural practices on female access to technical industrial education?

1.4. Research Objectives

1.4.1. Main Research Objective

The main objective of this study is to investigate the impact of socio-cultural factors on female access to technical industrial education.

1.4.2. Specific Research Objectives

- To examine what relationship exists between social stereotypes and female access to technical industrial education.
- To assess the influence parent attitudes have on female access to technical industrial education.
- To examine the impact of sociocultural practices on female access to technical industrial education

1.5. Hypothesis of the Study

1.5.1. Main Hypothesis

This study is based on the hypothesis that there exist a significant correlation between socio-cultural factors and female access to technical industrial education.

1.5.2. Specific Hypotheses

- Social stereotypes significantly influence female access to technical industrial education.
- Parental attitudes significantly influence female access to technical industrial education.
- Sociocultural practices significantly influence female access to technical industrial education.

1.6. Justification of the Study

There is a lot of evidence that stand to justify the low access of female students in technical and vocational education in general and technical industrial trade in particular over two decades since sex discrimination was eliminated in education. According to the United Nation Education for All (1995) initiative recognize that women and girls are poorly placed to

benefit from the knowledge economy because they have less access to scientific and technical education specifically and education in general. The UNDP (2002) statistics on female access to education affirms that women and girls lag behind boys and men in matters of education.

- Two out of three of the 110 million children in the world who do not attend school are girls and there are 42 million fewer girls in than boys in primary school.
- Even if girls start school they are far less likely to complete their education than boys.
- Girls make up 60 percent of children not in primary school
- Girls who missed out on primary education grow up to become the women who make up two- thirds of the world's 875 million illiterate adults.
- Living in the country side widens the gap; a girl living in the rural area is three times more likely to drop from out of school than a city boy.
- Of the 113 million children not in school, 97 percent belong to developing world.
- 93 countries, whose population makes up 39 percent of the world's poor, do not have data to be able to ascertain access to education.

Institutionally, in Cameroon as a whole and the North West Region in particular, the number of technical and vocational colleges presents a huge disparity when compared to grammar education that shows that technical education is less solicited by households. According to statistics from Regional Delegation of Education (DRES, 2013) general education institutions both bilingual and normal for the first and second cycles in both private and public schools in the seven divisions are 323 colleges. On the other hand, technical and vocational institutions in the seven divisions for both the first and second cycles private and public schools stands at 114 colleges. This presents considerable difference of about 58 percent and a clear indicator that there is a stigma on technical education. This affirms to the assertion of Hoftmann-Barthes et Al (1999) that most Sub-Sahara African countries have not develop sufficiently the skilled work force for a successful take off on industrialization owing to their neglect of technical education.

Enrolment is a major indicator in the education evaluation process. It indicates whether an educational product is being consumed and worthwhile. According to Hornby (2001) enrolment is the act of officially joining a course, field, or school. Female enrolment in non-traditional courses in technical and vocational education has been identified by several research studies to constitute a problem of development especially as women constitute a majority of the population in most countries. In Cameroon their population registers about 51 percent (NIS, 2012). Efforts to move women and girls to male dominated options remain a

real educational challenge. The national enrolment of girls in technical and vocational education High school shows proof of this.

Table 1.1: National enrolment in technical high schools

YEAR	GIRLS ENROL	BOYS ENROL	TOTAL
2009/2010	27199	76937	104136
2010/2011	39798	102138	141936
2011/2012	46951	117384	164335
2012/2013	50015	112483	162498
2013/2014	53516	120356	173872
TOTAL	**217479**	**529298**	**746777**

Source: (NIS, 2014)

This enrolment shows that the women are over 200 percent less than boys in technical colleges. The non-governmental organisation 'Task Force'(1981) on the roles of women, affirms that for development to proceed equitably all sectors of the society must be involved in the choice of science and technology, all must be aware of its limitations and all must enjoy its benefits. This has not been attained four decades after, an indicator that there exists obstacle(s) on the way of females in science and technology.

Traditionally, women have a larger role in family life and many think that formal education is not necessary to play these roles as they can learn from their mothers. They lack role models in the learning and work place of industrial technical education from whom to draw inspiration and build confidence. Also being at the periphery of decision making and the lack of information about vital issues has handicapped women's progress tremendously. The information women need to develop are often wrapped up in traditional beliefs and customs that are difficult to break. Access to Information is empowering, enabling people to monitor policy, lobby, learn, collaborate, campaign and react to legislation (Volume VII UNESCO, 1997). Lack of access to information is compounded by the fact that many women are deficient in functional, functional technological and scientific literacy.

Women's technical education and their access into technical industrials trades leading to engineering professions are critical at this point of the nation's future development plan. Vision, 2035 necessitate the increase in the pool of human resource in the area of industrial education that will to increase creativity, expertise and competitiveness in technology. This can be achieved by increasing female industrial teachers who will serve both as role model and a force of encouragement for girls. Increasing the pool of potential and available expertise

by including women will allow Cameroon to reach faster at the recommended qualitative and quantitative skilled labour force, of approximately 200 engineers per a million people (UNESCO 2009). This workforce cannot be reached if women who constitute 51 percent of the country's population are left out.

Girl's enrolment in engineering trades has remained at an alarming less than 5 percent over the decades (MINESEC, 2012). This implies that approximately 95 percent girls\women are technically illiterate, women and girls who cannot turn screws, tie bolts or fasten nuts or better still those who cannot understand, use and interpret technical messages. This has affected even the number of female teachers in the technical industrial trades and sciences in a whole. Therefore, it will be important for the nation to move towards gender equality in technical industrial education to accelerate the pace of national progress and achieve sustainable development.

Table 1.2: Female Industrial Teachers on the Staff of GTHS Bamenda

YEAR	Total on the staff	Male	Female	Industrial Female Teacher's
2009/2010	155	77	78	8
2010/2011	144	72	72	5
2011/2012	129	75	54	5
2012/2013	132	64	68	7

Source: (GTHS Bamenda; Annual Reports)

1.7. Delimitation of the study

1.7.1. Thematical Delimitation

The study is undertaken within the framework of educational administration in the domain of gender issues in science of education research. Girls' education is an intrinsic right and a critical lever to reaching other development objectives. Therefore, learners' (girls) access to educational programmes is an important factor in need assessment and enrolment in school is considered the first step towards enjoying the many benefits accrued in education. Enrolment is an indicator that an educational provision is worthwhile and is being utilized (Hassan, 2002).

1.7.2. Geographical Delimitation

Geographically, the study will be carried out on some selected schools in the Bamenda Central sub-division in Mezam Division of the North West Region in Cameroon. Mezam

division is a blend of rural and cosmopolitan sub-divisions and the Bamenda central is seat of the division. The municipality consists of Bamenda 1, 2 and 3 councils, with headquarters in Bamendakwen, Nkwen and Mankon respectively. There are 37 technical institutions in the division including private and public owned institutions. The Division is rich in skill training in traditional arts and crafts and has a youthful and buoyant population. The absence of modern industries constitutes a real handicap for employment opportunities for thousands of school leavers especially those of grammar education. Girls who are not privileged to attend secondary education are orientated mostly in female gender base trades such as: hair dressing, tailoring, catering and so on. While boys are the dominate sex type in trades such as motor mechanics (garages), carpentry, welding, building and construction and so on. Informal skill training is the predominant practice providing training to 60 percent of youths who are not in school (Divisional Delegation of Labour, 2013).

The technical and vocational colleges selected for the study include;

- Government Technical High School Bamenda
- Government Technical High School Nkwen.
- Government Technical High school Alabukam.

1.8. Significance of the Study

1.8.1. Institutional Significance

The improvement of the status of women through education in general and technical and vocational in particular has been recommended for economic and social progress. It is believed that, education of females yields substantial benefits for the girls and women, their families and societies in general. Consequently, the significance of this study will affect the home, state and other education partners in the contemporary world where technology is inevitable.

The government which is directly concerned with policy issues in technical education may find this work useful in improving technical education provisions in infrastructure, curriculum innovation and quality and quantity teacher training and increase relationship between industries and technical institution. It will also impact the drive to emergence 2035 by increasing awareness on the population to embark on technical education through sensitization programme and also enact policies such as bursary grants for females, opening of female technical college, increase female industrial teachers and so on.

This work will help to rekindle interest in girls to give a try in technical industrial education and to take advantage of the employability inherent in high skill and high paid jobs either in a paid or self- employed job. To demystify the belief about female intelligence held by the community and parents and to improve women self-worth and confidence in their potentials and capabilities as well as encourage females to shun repressive traditional practices. By asserting in more productive functions, the status of women will accord greater respect and economic importance which reproductive roles do not provide.

Through awareness-raising parents will be opportune to orient their daughters toward current labour market options. This will solve the problem unemployment of many school graduates who roam the streets. It will also help male parents who are the chief decision makers to adjust their attitude towards female education orientation and also demystify the social prejudice about girls and their abilities so as to encourage girls to give a try in male dominated trades.

As recommended by UNESCO, female access to skill education should be treated on the same scale as HIV/AIDS, malaria etc. Thus this work will therefore trigger the need for nation-wide sensitization on this subject. It will discourage harmful practices that relegate women and forced them to non -productive role and since educational effectiveness depends on policies, sensitization to demystify the poor public perception about technical and vocational education would be enforce.

1.8.2. Theoretical Significance

Theory plays an important role in providing explanation as to why a phenomenon occurs and the dimensions involved. In this research study, the theories that are selected have help to provide background literature in the treatment of the variables and also for investigating the reality of hypotheses. The gender schema theory provided information on the role information culture can have on shaping gender ideologies. The Human Development theory stresses on the significance education plays in developing this wonderful resource and lastly the career orientation theory explain the process involve in nurturing a career. Though not amount of theories can say it all, the data collected substantiated these theories.

1.9. Definition of Concepts

1.9.1. Education

The concept presents a broad spectrum of definitions. However many psychologists, sociologists and philosophers maintained that education is a society cultural reproductive system (Ngwane 1990). Other definitions of education that have also been selected include:

"Education is a process that would enable the youths, the future of the country to develop a harmonious personality whose valued qualities and knowledge contribute to enhance the value of the entire society. These values are; love for country, love for job well done, work ethics and progress, sense of responsibility, sense of dignity and honour" (MINESEC Teachers' Manual,1999).

Ukeje (1996) as quoted by Tchombe (2001) defines education according to what education should be rather than what it is. He says "It is the role of education to promote participation in social employment, to influence people's ways of doing things, to be in accord with the changing times, to improve standard of living, show ways of preventing disease and practising sound habits of health, sanitation and nutrition."

The Law on Orientation of Education in Cameroon section Law N°98//004/1998 states that the general purpose of education shall be to train children for their intellectual, physical, civic and moral development and their smooth integration into society bearing in mind prevailing economic, socio-cultural, political and moral factors.

These definitions focus on the fact that education should be evolving to reflect social realities at each given time, producing young men and women with a harmonious personality, whose qualities and knowledge contribute to enhance the values of society. Maya Angelo an America poet says, 'when you know better, you do better'.

1.9.2. Technical Education

According to UNESCO (1997) International Standard and Classification of education, defines Technical Education as the education and training aimed at the acquisition of practice skills, know-how and the understanding (aptitude) necessary for employment in a particular occupation, trade or groups of occupations or trades. It is aimed at preparing the student for work in a commercial or technical field.

The World Bank (1991) defines Technical education as the educational pattern which provides the learners with professional employable competencies (knowledge, skills and attitudes) in an area of specialisation; in perspective of preparing young people for ready insertion into the job market or in creating self-employment in fields corresponding to their talents and aspirations.

1.9.3. Vocational Education

Vocational education refers to those educational function and processes purported to prepare and equip individuals and groups for working life whether or not in the form of paid employment (Skilbeck & al, 1994).

Vocational education has been variously defined by Osisioma, 1993; Olaitan, 1993 and Nzelu, (1993) as an aspect of education that is mainly concerned with the grooming of individuals for skilled performances. It is a form of education that requires training and re-training of individuals, acquisition of skills and competences; all these aimed at making the learner more productive through improved performance in either a paid job or self-employment.

1.9.4. Technical and Vocational Education

It is the used as a comprehensive term referring to those aspects of educational processinvolving, in addition to general education, the studies of technology, and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupations in various sectors of economic and social life UNESCO, (1989).

Technical and vocational education is further understood to be; an integral part of general education; a means of preparing for occupational fields for effective participation in the world of work; an aspects of long life learning and a preparation for responsible citizenship; an instrument for promoting environmentally sound sustainable development and a method of facilitating poverty reduction (Hassan, 2002).

In the Cameroon technical and vocational education are delivered in one package commonly referred to as technical education. It is divided into the two major components: the industrial and commercial sections. The industrial section deals in the secondary sector of the economy involve with the transformation of goods and services. It is the domain of the craftsmanship, vocational, technical and engineering trades and specialisations. This will be the main area of focus on this study. Commercial section, deals in the tertiary sector of the economy involve in the production of services and the management of goods and services. Specialisation in the commercial section includes; accounting, management, catering, administrative clerks and so no.

1.9.5. Technology

Technology is the base on which technical education functions. The United Nations charter (1948) defines technology as a composite of techniques, constituted of craft skills (welding, shaping, assembling) acquiring primarily the dexterity of hand and eyes and

conceptual skills (knowledge and information) such as operating data, designing, engineering, construction, production and maintenance.

UNESCO (2005) defines technology as the advanced scientific knowledge used for practical purposes. It involves the objects instruments and materials used by human beings to enhance production of goods and services.

1.9.6. Socio-cultural Factors

According to Dictionary.com Socio-cultural factors are factors pertaining to or signifying the combination or interaction of social and cultural elements. They involve the codes and conventions, the rules by which society functions and which are both a creation of society as well as constituting elements of its determining the allocation of these specific traits to the sexes.

Socio-cultural factors can be defined as the things that affect our life style as a society. It involves aspects such as survival attitudes, values, beliefs, norms, and behaviour shared by the group. They can influence an individual's behaviour depending on one's social values. Some could be religion, economic status, education, family, politics, cultural values and so on. Socio cultural factors involve both social and cultural elements of the society. (Ember and Carol, 2004:pp.197-200).

According to Wiki Pedia (2011) socio-cultural factors are large scale forces within cultures and societies that affect thoughts, feelings and the behaviour of individuals. They include functions such as; child rearing attitudes cross cultural differences, cultural deprivation, kingship structure, cultural identity, family structures and so on.

From the above explanations, it is evident that human behaviour is based on guidelines which are learned and shared. Without a shared culture members of society would be unable to communicate and cooperate thus confusion and disorder would result. Socio-cultural factors therefore will be viewed in this study as the practices and principles including perceptions held about men and women in career orientations.should carry on their assigned roles.

1.9.8. Female

The Oxford Learners' Dictionary defines female as the sex that produces offspring: woman. Sex is what one is biologically: man or woman. Female therefore will mean possessing biological traits as ascribed by nature to women. The main biological trait of female is procreation. The Medical Dictionary defines female as an individual of the sex that

produces ova or bears young. It is the sex that has the ability to become pregnant and bear children. Dictionary.Com. defines female as a person bearing two X chromosomes in the cell nuclei and normally having a vagina, a uterus, and ovaries. And developing at puberty rounded body and enlarged breast and retaining a beardless face; a woman or a girl. In this study, we use female and girl indiscriminately to mean the the girl student.

1.9.9. Access

The word access is variously defined as follows:

Merriam Webster Dictionary defines access as a way of getting near, at or to someone or something; a way of being able to use or get something; a permission or the right to enter, get near, or make use of something or to have contact with someone.The Free Dictionary defines access as the means of approaching, entering, exiting, or communicating with or to make use of something; the ability, opportunity or right to see or approach someone or something.The Oxford Learners Dictionary defines access as the means or opportunity to approach, or enter a place; the right or opportunity to use or benefit from someone or something.

Conclusion

Chapter one has looked into the research problem by stating the problem, formulating the research questions, setting the objectives, formulating the hypotheses and defining the relevant concepts involved. This will lead us to chapter two which is concern with the review of literature and theoretical framework.

CHAPTER TWO
LITERATURE REVIEWANDTHEORETICAL FRAMEWORK

Introduction

This chapter is focuses on the literature review and the theoretical frame work. As far as literature review is concerned, it is what other critics or scholars have written on the topic or the area under study. The researcher will thus review the literature of technical and vocational education, and the socio-cultural factors identified to affect female access to technical and vocational education. Such information will be obtained through textbooks, journals, magazines websites, published and unpublished articles.

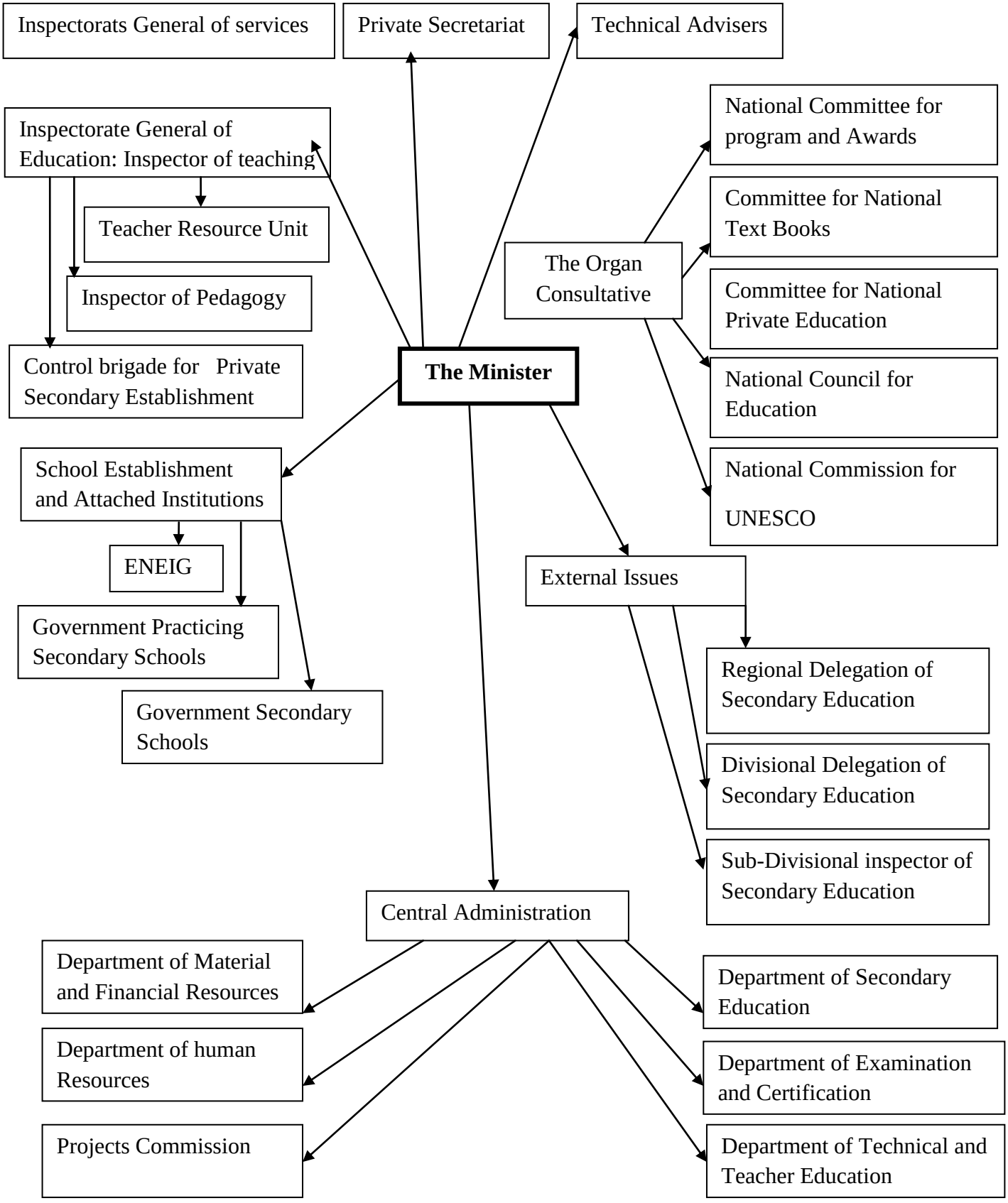
The theories relevant in the analysis of the work are; the Gender Based Schema Theory (1981) propounded by Sandra Lipsitz Bem, a prominent social psychologist and gender activist. The Human Capital Theory (2005) of Gary Becker and Career Choice theory (1971) of Eli Ginzberg.

2.1. Section One: Literature Review on Technical Education.

2.1.1. The Organigramme of Secondary Education

The Ministry of Secondary Education is responsible for designing, implementing, and evaluating government policy in areas of general education, technical and vocational education and teachers' education. Below is an organizational chart of the ministry of secondary education.

Figure 2.1: Organigrame of secondary eduction



Source: Decree N° 2005/139 of 2012, outlining the organization of MINESEC

Figure 2.2: The organisational chart showing detail distribution of department heads

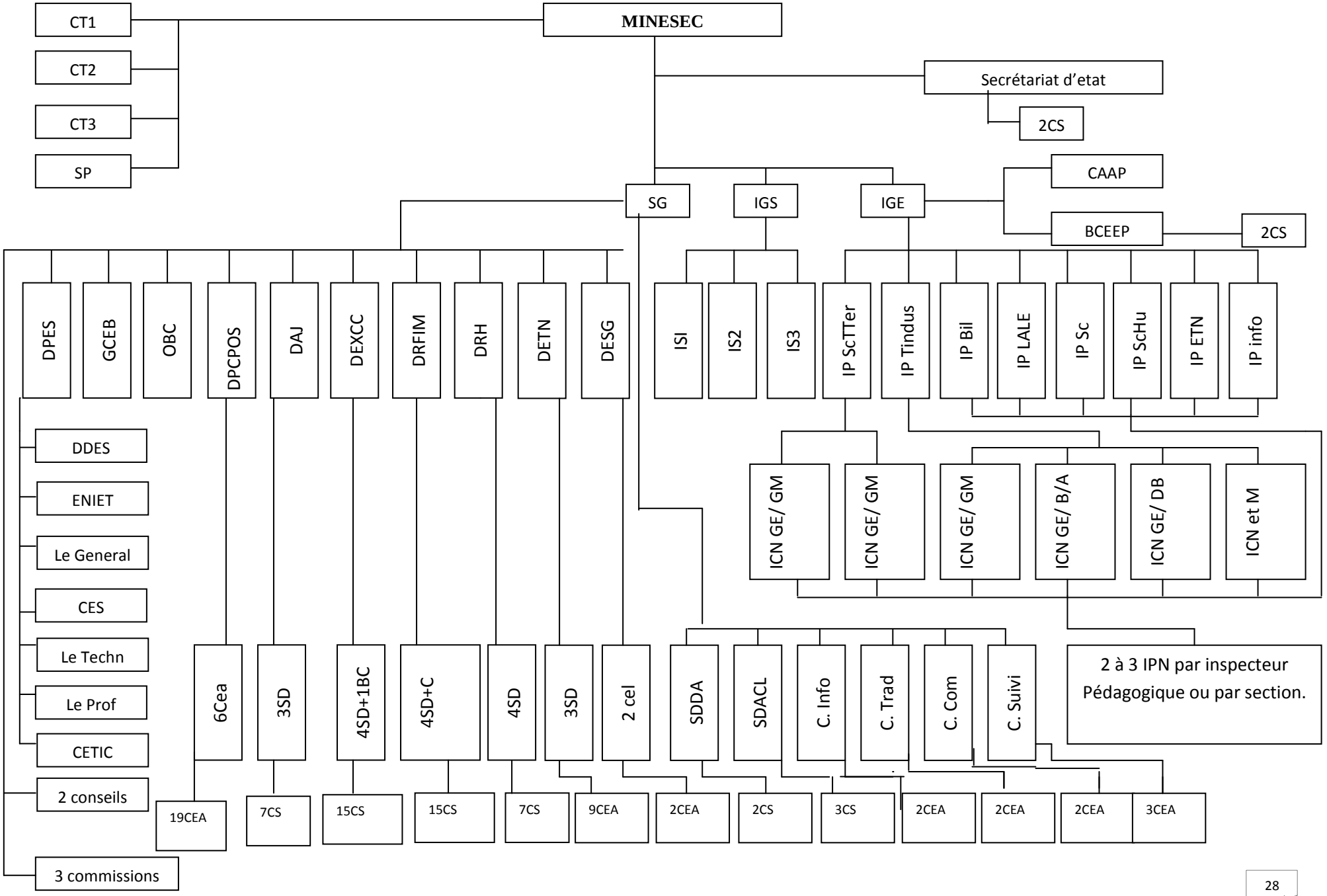
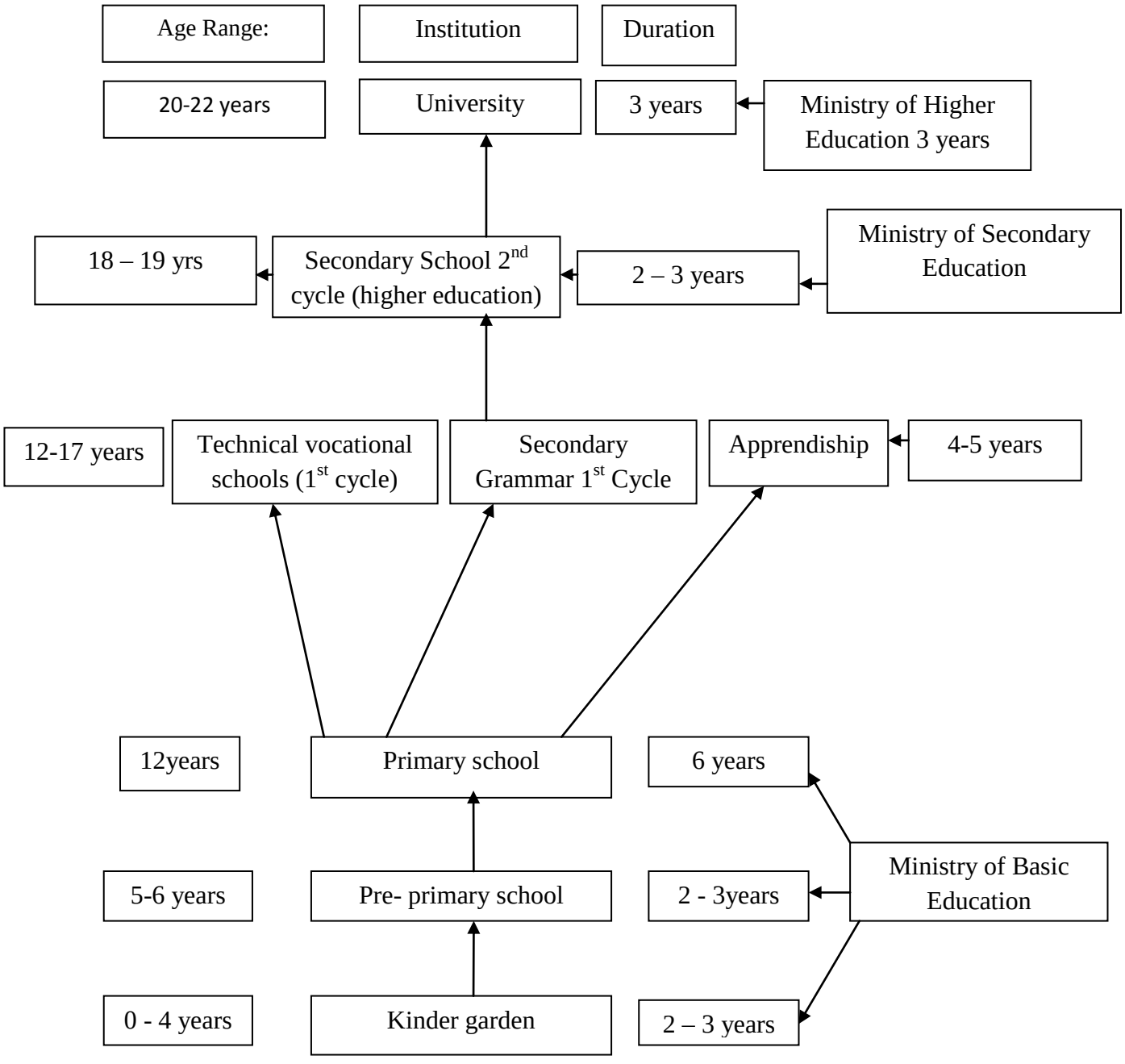


Figure 2.3: The structure of the eductional system in Cameroon



Source**:** EDCF Korea Project

2.2. Technical and vocational education and training in Cameroon

Technical and vocational education on the national policy is that aspect of education which leads to the acquisition of practical and applied skill on basic scientific knowledge. In accordance with the 1998 Orientation law the mission of TVET include:

To provide trained manpower in applied sciences, technology and commerce, particularly at sub-professional grades.

To provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.

To provide people who can apply scientific knowledge to the improvement of and solution of environment problems for use and convenience of man.

For self-employment, economic sustenance and development. These aims are so crucial for nation building and as such should involve many more citizens than the present scanty population of skill trainers and trainees.

Skill training in Cameroon is provided by both the formal and informal sectors with the informal sector by so far the largest providing about 70 percent of skilled training to young men and women in a variety of trades (National Employment Fund, 2012). In the formal sector, there are several ministries involved such as Ministry of employment and Vocation. However, the ministry of secondary education is particularly concern with training of young boys and girls. TVE is open to pupils who have completed 6 years primary education and have passed the FSLC or the CEPE in either the Anglophone or Francophone sub- systems respectively. The secondary technical education comprises two cycles; the first cycle last for 4 years in the Francophone sub-system and 4 and 5 years in the Anglophone sub-system, leading to the award of either the CAP certificate or GCE O/L technical certificate. (The French sub system operates in the state owned schools in the Anglophone regions). The second cycle covers 2-3 years; 2 years in the Anglophone sub-system leading to GCE A/L technical and 3years in the Francophone sub-system leading to the Probatoire Technique and Baccalaureate Technique certificates in the different specialties. This cycle admits graduates from both technical/ vocational or grammar education background. However, few students from general education opt for TVET each year.

2.2.1. Fields of Specialisation in Technical Industrial Education

The specialisation of training in technical education covers the major fields in engineering, science and technology. At the first level the course content is mostly vocational with the provision of skills while at the second cycle the course content is an introduction into engineering. The three major engineering specialisations are offered in most of the schools Cameroon.

Civil Engineering

It is the professional engineering discipline that deals with the design, construction and maintenance of the physical and naturally built environment such as roads, buildings, bridges, canals, dams and so on. Civil engineering is broken down into the following fields;

Architectural, Environmental, Geotechnical, Control, Structural, Earthquake, Transportation, Hydraulic, Water resources, Surveying and Municipal Engineering.

Electrical/Electronics Engineering

Electrical engineering is a field of engineering that generally deals with the study and application of electricity, electronics, and electromagnetism. Electrical engineering is divided into the following sub-fields: Power, Control, Electronic, Micro-electronics, signal processing, Telecommunication, Instrumentation, computer, Electro-mechanicaland Biomedical engineering (Hydro-dialysis monitoring).

Mechanical Engineering

This is the discipline that applies the principle of engineering, physics and material science for the design, analysis, manufacturing and maintenance of the mechanical systems. It is the branch of engineering that involves the design, production, and operation of machinery. It is one of the oldest and broadest of the engineering disciplines. It is sub-divisions include; Mechanics, Mechatronics and robotics, Structural analysis, Thermodynamics and thermo-science, Design and drafting, Bio-mechanics, Automobile engineering, Computational fluid dynamics, and Acoustical engineering.

Other Engineering Specialisations

Other engineering specialisation that are offered include; Forestry engineering, Chemical engineering, Arts and Fashion, Agricultural engineering. The various trades and specialisations in the various engineering fields are illustrated in the table below;

Table 2.1: Specialisations offered in Technical Industrial education 1st and 2ndCycles

Engineering fields	**Specialization and trades**	
	1st Cycle	**2nd Cycle**
Civil Engineering	Masonry, Draughts manship, Tiling, Plumbing.	Building and Construction (F4-BA), Architectural Draughts manship (FA-BE), Public works (F4-TP), Plumbing.(SI)
Electrical/Electronic Engineering	Electrical equipment, Electro-mechanics, Electronics, Air conditioning and refrigeration.	Electrical Engineering (F3), Electronics (F2), Air conditioning and refrigeration (F5), MISE*
Mechanical Engineering	Automobile bodywork and painting*, Metal work constructor, Automobile Electrician/Electronics, Automobile injection mechanics, Fitter machinist, Automobile repair mechanics, sheet metalist	Mechanical Engineering (Fl), Automobile Engineering (MA), Industrial Maintenance (MEM), sheet metal works (MF-CH), Jewellery (CH)
Forestry Engineering	Timber saw sharpeners, Carpentry, Cabinet makers and Joiners.	Carpentry and joinery (MEB), Forestry Exploitation, Wood Transformation Industry,
Chemical engineering	Biologist/chemist assistance, Industrial chemist assistance.	Chemical engineering (Cl), Biologist (F7), Bio-medical sciences (F8)
Arts and Fashion	Dress making, Internal Decorator*, Esthetics-hairdressing*	Decorator and sculptor, clothing Industry (HI)
Agricultural Engineering		Crop Production, Animal production, transformation (CP)

Source: MINESEC (2010)

2.2.2. Technical and Vocational Education Providers

Technical and vocational education and training in Cameroon is provided by three sectors including.

2.2.2.1. The Training Sub-System of the Informal Sector

This sub-system is by far the largest, estimated at about 70%, (NEF 2012). Here master craftsmen on individual bases assure the training of their apprentices. Based on the acquisition of manual mastery of the trade, training is adapted to the simple tasks of a repetitive nature meeting the technical requirements of the informal sector since senior apprentices are integrated in the market without any major difficulty. The types of training offered are therefore adequate in relation to the specificities of the informal sector. The system of financing training relies exclusively on master craftsmen and the families of the beneficiaries.

2.2.2.2. The Training Sub-System for Middle-level Technical Managers.

This sub-system operates within the framework of the formal school system in the acquisition of skills. It is dispensed in middle school such as Technical Colleges, and Technical High School, (GTC, GTHS, CETIC, LT). Training takes place in organised structures within the purview of the State, the lay private sector or charitable associations. This sub-system aims at developing more elaborate skills than in the preceding case in so far as it aims at imparting technological knowledge as well as specific skills for each trade. The aim of this sub-system is the training of workers whose profiles should better correspond to the needs of enterprises in the modern sector of the Cameroonian economy. The graduates of this sub-system can join the labour market as self employed or paid worker.

2.2.2.3. The Training Sub-System for Higher Vocational Training

The sub-system of higher vocational training is concern with the training of senior technicians and engineers in universities and schools of higher education. In Cameroon these institutions are few and entrance into them is so restricted being mostly based on competitive examinations. As a result TVE is a dead end for many who desire to go beyond secondary level because of the absence of an open-door policy into universities of technical education. This Sub-system offers training courses that are well structured and whose graduates join the labour market under good conditions. It has been observed that less than 7% of the job seekers from this sub-system are unemployed (NEF, 2008). On the whole, review of Vocational training system shows that the State remains the major provider of training focused on Engineering specialties

(mechanics, electronics, Agro-industry and so on) and it is the major actor in the development of new areas of training.

2.3. Institutional Context for Technical and Vocational Training

Institutionally, Technical and vocational education and training in Cameroon is provided by eight sectorial ministries, each of which had its own training system, and without formal consultations between the ministries. In response to the 1998 initiative to increase access and participation in TVET, the government of Cameroon in August 2002, created the Ministry of Technical and Vocational Education and Training (MINETFOP) to restructure and give new impetus to the sector. The creation of this new ministry, however, did not lead to the unification of decision making of the sub sectors. This is because the concerned ministries retain prerogatives to organise vocational training due the absence of a formal consultative mechanism. Sadly, in 2004 this ministry was closed and Degree No 2005/139 of 25 April, 2005 allocated the activities of technical education under the auspices of secondary education in the department of technical and vocational education.

Basically, there are three categories of ministries that oversee technical and vocational training in different areas. The first category include; the Ministries of Secondary Education, Employment and Vocational training and Medium and Small Enterprises. They oversee qualifying training or training leading to a diploma which is not related to any specific sector of activity. Second category involve four other technical ministries; Ministries of Health, Finance, Youth, and Public Works each oversee the training they offer, mainly for their future employees; and a third category of ministries including the ministries responsible for Women's Affairs and Tourism organise vocational training themselves covering the sectors of activity of the various ministries.(ADB, Report,2008)

2.3.1. Some recent trend and principal characteristics of technical education and vocational training

Enrolment

The numbers of pupils in technical and vocational education remain problematic over the decades. The impact of the Law of Orientation (1998) which laid down guide lines for technical education objectives has over the decades pull less than a substantial enrolment in TVE training programmes. UNESCO (2011) report note that Cameroon has registered the highest pitfall in skill training, and therefore depends on foreign engineers to construct roads, build bridges and other durables infrastructure. Enrolment is relatively low when compared with general secondary

education. There also exist wide disparities within rural and urban areas and are still gender specific in many of the specialty offered. Here below is the state of enrolment from 2000-2011 to show disparity of female demand of education.

Table 2.2: National Enrolment of Female Students in Secondary Grammar and Technical and Vocational Education

Years	Enrol Secon Educ.	Enrolment Grammar Educ.	Female Enrol Grammar. Edu	Enrol in Tech. Edu.	Female Enrol Tech Educ
2000	699,669	554,830	258,884	144,839	56,299
2001	848,276	684,643	315,826	163,633	61,935
2002	835,673	674, 970	312,916	158,786	61,815
2003	823,068	699,129	325,165	153,939	61,576
2004	751,580	611,681	273,421	139,899	55,957
2005	784,203	640,113	286,131	144,090	57,636
2006	767,892	776,392	349,998	179,655	70,622
2007	955,947	844,432	382,274	197,435	76,822
2008	127,691	1,912,471	414,809	215,220	83,096
2009	1,268,655	1,009,787	476,317	258,868	97,076
2010	421,556	1,131,192	537,656	290,364	107,377
2011	1,574,451	1,252,592	598,864	321,859	117,704
Totals	**11,858,661**	**9,792,232**	**4,532,261**	**2,468,587**	**907,915**

Source: UNESCO, Institute for Statistics (2011)

TVE enrolment as a percentage of secondary school enrolment is less than 30 percent. Following UNESCO classification in 2005, Cameroon was classified alongside countries like Egypt and Algeria as countries with a TVE enrolment from 10-25 percent. Today, North African countries register the highest rates of over 60 percent in TVE and a greater female enrolment.This justifies their high level of social and economic progress. Female enrolment remains high in secondary grammar, few girls who opt to offer technical education.

. The question of enrolment according to trades is another aspect of the contingences in technical education. From the standpoint of the breakdown by trade specialisation, the tertiary streams predominate by far registering (62% of the total number), Technical industrial trades covers 38 percent. Girls represent 17% of technical and vocational training pupils (compared with 38% in general secondary education) (MINESEC, 2011). Females generally account for significantly higher percentages of enrolments in courses oriented towards commercial and service trades or occupations rather than courses towards industrial and engineering trades or occupation. They are mainly in the traditional female streams such as Dress Making, Home Economics,

Esthetiques and so on. In fact, in the engineering streams, girls' representation is under 5%. Prove of this is evident in the selected schools.

Table 2.3: Annual Female enrolment in technical industrial trades in the selected schools

Enrolment	2010/11		2011/12		2012/13		2013/14	
TRADES	M	F	M	F	M	F	M	F
Electronics F2	83	03	105	04	145	04	104	8
Electro-Technology F3	196	07	269	11	270	13	238	17
Civil Engineering F4-BA	325	08	282	04	297	05	282	5
Civil Engineering(Draughtmanship) f4-BE	143	00	168	01	136	01	164	6
Civil Engineering (Public Works) F4-TP	98	00	103	06	125	04	128	4
Air Conditioning and Refrigeration F5	32	01	48	02	55	02	61	02
Motor Mechanics MA	158	05	234	04	209	03	198	03
Audio- Visual Equipment Maintenance MISE	36	01	55	01	60	01	48	01
Electro-Mechanical Equipment maintenance MEM	63	00	94	02	87	01	91	01
Sheet Metal Construction MF-CM	183	00	240	07	255	05	264	05
Survey (Topography) GTTO	17	00	59	02	59	02	71	02
Wood Work MEB	182	01	264	01	270	01	310	02
Dress Making IH	01	190	01	209	01	228	02	216
Total	**1517**	**216**	**1867**	**254**	**1969**	**270**	**1913**	**272**

From the table above female enrolment in strict industrial disciplines is very low and in some trades they are totally absent. The trade of high female enrolment in the industrial section is Dress Making – a traditional option. Also, traditional craftsmanship options such Building and construction, Motor Mechanics, electricity and woodwork (Option Batiment) have higher enrolments than others. Some new technological trades have not yet gain popularity and because of the huge finance need to acquire equipment only GTHS Bamenda is offering all the options on the table. The figures on the table is the sum total of enrolment of the three school.

This situation is however not unique to Cameroon, other sub Saharan countries are also faced with low female enrolment in technical industrial trades. Here is a survey of the situation in some African countries.

Table 2.4: Female Enrolment in Technical Industrial Education in some African States

Country	Percentage of female enrolment
Ghana	12
Zambia	5
Malawi	4.6
Namibia	11.8
Kenya	33.6
Zimbabwe	6.8
Tanzania	3
Uganda	1
Nigeria	Summary8.7

Source: (UNESCO, 2000)

2.3.2. Teaching

Teachers have a large capacity to build in their students for who they are and what they teach. The percentage of female teachers in primary education was estimated at to be 57.8 % world wide and 41.7% in sub-Saharan Africa. At the secondary level female teachers account is estimated at 32.9% and are predominate in the social and behavioural sciences courses. In technical and vocational education there are very few female teachers in the technical industrial in all the countries in the UNESCO survey of 1998. In Cameroon, female technical teacher ratio is 1 female to 78 male teachers (MINESEC, 2011). This perpetuates to build up a culture of lack of role model of female technicians. Capacity building through education has been identified by the World Bank as Africa most disenabling problem arising from an inadequate supply of qualified teaching personnel. From the Ministry of Secondary Education 75 percent of the teaching staff in educational institutions offering training leading to a diploma is competent. However, only 32% have work experience.

The lack of experience is as a result of the barrier between industry and technical and vocational institutions. In our context unlike in countries like Singapore the institutions are linked with the industries such that industrial training is made more readily and frequent. This culture facilitates the insertion of graduates in the socio professional melieu. Also, there is the insignificant presence of female teachers in the fast developing streams of industrial trades. It is necessary to increase female teachers in teacher training institutions to serve as role models to encourage the enrolment of girls. Only 2% of the teachers in the engineering streams are women. (MINESEC, 2013)

2.3.3. Curriculum Approach

School echo and reinforce gender ethos in a number of ways such as the curriculum. The curriculum plays an important role in making a discipline relevant and attractive to students and encouraging their involvement. There is no gain saying that the curriculum for TVE is both outdated and irrelevant to the socio- economic context with its huge leaning towards colonial trends. The practical applications of most of the concepts to a wide range of occupations, as well as outside the work environment are not evident. Graduates of the system have problems to enter the working life. Professionalization is practice relevant and since the industry do not work in close collaboration with the schools as it obtains in the dual system, the school does not tailor the programme in function with the needs of the industries. Budget constraints worsen by corrupt practices of school administrators have further reduced practice sessions. Most often groups are made up for many students this makes practice sessions passive learning for the less motivated students.

Several approaches have been tried in with the passage of time to make learning relevant and developmentally oriented such as from objective-base approach to competent-base approach. Though no one approach can claim to solve the teaching and learning challenges, the two many general education subjects in the TVE curriculum is a cause of concern. Also schools enrolments echoed and reinforced gender ethos. Text books are usually gender bias with women portrayed only in the traditional roles. The masculine construction of these subjects play for female alienation.

2.3.4. Evaluation

The content of the curriculum is evaluated on the students in accordance with the policy guiding these activities. The sequential evaluation is operational in the schools on the continuous assessment programme. There are six sequences comprising three terms for each academic year. The end of course examinations are organized by the examinations boards: the GCE Board organise GCE Technical and Bacc and Related Examinations for the Anglophone sub system while the OBC Board organizes the BEP and Bacc and Related Examinations for the Francophone sub-system. CAP is organized by the Ministry of Secondary Education. The Ministry of Secondary Education oversees the running of all state recognize examinations. It supplies the examination questions and the boards run the examinations. Over the years the GCE Board has been acknowledged for successful running of the examinations with minimal examination malpractices. However,students' performance in general in technical examinations ranges between 40-55 percent success rate for the first and second levels.

2.4. Instruments on Technical Industrial Education for Girls and Women

The under representation of women in the science, technological, engineering and mathematics educational options have been addressed by many international as well as local instruments.They include :

- UNESCO, (1989) Convention on Technical and Vocational Education and Training.
- United Nation Decade on Women in Development (1985-1995)
- UN Convention on the Elimination of All Forms of Discrimination against Women: The convention on the rights of the child (Article 28/29)
- The Fourth World Conference on Women (Beijing, 1995).
- UNESCO, (1999) Agenda for Gender Equity which commits itself to encourage equal access to knowledge in all fields notably within science and technology.
- The Second International Congress on Technical education (Seoul, 1999)
- The World Conference on Science (Budapest,1999)
- UN Millelimium Development Goals, (2000)
- UN Commission on the Status of Women; Economic and social council Resolution 2008/29 of July 2008.
- UNESCO, (2008) Educational for All Global Monitoring Report-UNESCO Medium-Term Strategy (1996-2001) a six-year special project on scientific, technical and vocational education for girls in Africa.
- UN: Resolution 66/170 of 11/10/2011 as IDGC to recognize the rights of the girl child and unique challenges of girls face around the world

2.4.1. Technical and Vocational Education across the Globe

The experiences and success stories of other countries especially those in industrialisation nations constitute useful materials for innovation in TVE curriculum for a nation like Cameroon that has begun in its pursuits for industrialisation. Though no single method can best meet the aspiration and needs of any country, however, a combination of experiences that reflect socio economic and cultural context are important. Here, are the experiences of some countries that have revitalise TVET polices and prospects to especially attract females to male dominated trades and vice versa and have achieved tremendous results. These countries share with Cameroon similar socio economic characteristics in either less or greater proportions and can constitute a great motivation in our effort towards economic emergence.

2.4.2. The Singapore, Philippines' and the Egyptian Experiences

Singapore is a country in South East Asia. It was a former colony of Britain that gained independence in 1965. It is a multi-racial society with a population of about 4.35 million people living on a small Island of 700 square metres. Singapore is a nation that before four decades after independence has move from labour intensive to capital intensive and to knowledge intensive economy. Today, Singapore is a modern city-state and a global centre for industries, business, finance and communication. Their major industries are petrol-chemicals, pharmaceuticals, high-end manufacturing, tourism and services. Their key trading partners are Malaysia, United State of America, China, The European Union, Hong Kong and Japan. It per capital gross national income in 2005 was US$ 26700. What has been the secret of a country whose limited natural resources and early political and economic life preceding independence have been too dramatic and challenging?

Educational development in general and skill training in particular was the priority area for the Singapore. After the sudden withdrawal of the British naval base and the separation from Malaysia the country rethink its educational orientation for effective human resource development. Realising that traditional trading, commerce, and service sectors alone cannot provide jobs for the growing number of school leavers, the government focus to expand primary and secondary education including vocational technical education. This was to ensure that the workforce has a firm foundation for the acquisition of vocational and technical skills, to support the labour intensive manufacturing activities such as ship repair, turning and fitting, sheet metal work, plumbing, radio and television maintenance and repair (Law SS, 2008). The mainstream education was largely academic with 76 percent enrolled as against 24 percent for TVET. If they have to achieve their goal then mentality change of the public perception of TVET is a prerequisite.

In 1973 the Department of Technical Education in the Ministry of Education was created with the task to oversee the development of technical secondary education, industrial training, and technical teacher training. Many girls and women were enrolled into these streams. Apprenticeship schemes were transferred from the Ministry of Labour to Department of technical education and 1975 there was the creation of the Industrial Training Board (ITB). The ITB was charged with the task to centralise, coordinate and intensify industrial training, introduce a new system of skill certification and to introduce new courses in areas such as Electrical, Electronics, Metal, Mechanical engineering, Heavy Duty Diesel and Motor Mechanics. A system of training for working adults male and female to upgrade and acquire

technical skills was put in place. Focus was principally on communication skills (English language) and Mathematics.

To achieve a new vision for TVE, in 1990, the government of Singapore established the Institution of Technical Education. ITE is a government funded post-secondary institution focusing on TVE. ITE is neither a university nor a polytechnic. Its goal is to train technicians and skilled personnel for jobs and careers in major sectors of the economy with the mission to create opportunities for school leavers and adults learners to acquire skills, knowledge and values for long life learning. How did ITE operate? It operated on the principal of; Hands-on where students are expected to acquire a strong foundation on technical skills; Minds-on where learning should develop independent thinking and flexible practitioners who are able to cope with changes and Hearts-on where learning should develop a complete person with the passion for the what they do, with confidence and care for the community and society. ITE was therefore provided a comprehensive education where students integrate theory with practice through course work, projects, industry partnership, community service, and global education. The intent is to produce graduates who are market relevant, enterprising, and adaptable as long life learners in a global economy.

Curriculum, pedagogy and the learning environment are important aspects to acquire a positive respond to TVE vision. The curriculum model, that is (what is to be delivered) courses are built on skill competences and standard. 70 percent of curriculum time is devoted to practice and 30 percent to theory. 80 percent of curriculum time was devoted to core modules which defined occupational area where graduates will seek employment and 15 percent curriculum time devoted for students to acquire skills of communication, team work, thinking and problem solving, sports and wellness and so no. The German Dual System approach was adopted and with the collaboration of multinational corporations new approaches and practices were infused in local training during industrial experience. In this way students were better equipped as long life learners and remain adaptable in the global market.

A second key element is pedagogy. Pedagogy is the ‘how’ part of teaching and learning. The applied pedagogy was base to develop ‘the doers’, that is graduates who can apply what they have learned in practice called the’ Plan, Explore, Practice and Perform. The PEPP model approach is interactive and process-base. Under the guidance of a teacher, the student plans the work to be done, information required, the knowledge, skills and values he has mastered. Through this approach the student acquires three key competences namely; technical, methodical, and social. Creative and innovative teaching and learning environment involves a

good IT base environment that better prepare students for the real working world. The e tutor and e learning are well developed in Singapore educational system. A web-based fully integrated students' service is operational in all the ITE schools to facilitate contact with the global world. Like in most nations of the world and particularly Cameroon, there was a steep preference for academic education in Singapore as parents harbour the aspiration that their children will make it to university. The desire of a university degree was pervasive in that society. Realising that academic education cannot meet with the vision to build an industrialised society, through the activities of ITE the government was able to achieve a successful turnaround in the public perception and image of technical and vocational education. The measures implemented included; public campaigns, make compulsory subjects such as metal work, woodwork, technical drawing, and basic electricity in all secondary schools, recognised TVE graduates with high employability and successful careers, provision of modern and conducive teaching and learning campuses. Television competition, TVET awards, strong support of political leaders and success of graduates.

Today, Singapore is a highly industrialised nation owing to the open willingness to learn from and adopt the best relevant practices from other educational system in the building the ITE as evident in the pedagogy concept package. Enrolment of student depends on academic achievement, aptitude and interest. Gender differentiation in trade options is not an issue as there are many females as well as males into industrial technical options. With a skilled, talented, qualitative and quantitative workforce Singapore has transformed its economy into a modern city-state.

In view of this the government of Philippines has in the past decade through its educational institutions have taken the initiative to launch some distinct practice that could trigger changes in human resource development through skill training and also towards the enhancement of especially women's competences in technical and vocational education with special attention to attract female enrolment in technical industrial trades with the intention of optimizing human potential and achieving economic growth at the same time as the basis of country's development plan and platform of governance.

The 1987 constitution of the Republic of the Philippines, Article XIV, section VIII, mandates the protection and promotion of the right of all citizens to quality education at all levels. In 1994, Republic Act 7796 created the Technical and Skills Development Authority (TESDA). This body was mandated to provide relevant, accessible, high-quality and efficient technical education and skills training in support of the development of a globally competitive

Filipino workforce. TVET in the Philippines is predominantly provided by the private sector, which constitute 62 percent (2,796 institutions) of the delivery systems, with 38 percent (1,264 institutions) within the public sector. TVET providers include TESDA, the Department of Education (through vocational secondary schools, state universities and colleges, higher education institutions, and local government units. With such a variety of TVET providers, does not make technical education a dead end as studies can be pursue up to doctorate level. TESDA has devised ways to rationalised all TVET or middle-skills into a single, nationally recognised qualification. The Unified TVET Program for Registration and Accreditation Systems has been adopted to provide assistance and incentives to ensure quality TVET programmes. There are many entry points for the certification of skills, however, the system provides four levels of national qualification that ranges from level 1-4 being operator, craftsman, technician and master technician. The curriculum model is the German Dual system approach which combines classroom learning and industrial experience. This system has the advantage in that it feed the school system with what the industries required and thus direct training. Education wastage is minimised as the problem of youth employment is enhanced. These are good examples for Cameroon to copy.

Formerly, gender specific policies restricted female access to certain types of secondary education in Egypt. These policies are based on a belief of gender differences in the female/and male educational and occupational opportunities. Presently the situation has changed for the Egyptian women who scoop of educational choice has been widen with the Dual Education System- a joint project by Mobarck Kohi Initiative and the German Advisory Team GTZ-PPIU began in 1994. PPUI is a policy implementation unit which combines participatory approach and co-financing between government and companies and the German government.

The Dual Education System is aim among other things to promote female participation in non-traditional areas such as industrial mechanics and industrial electronics. The project seeks to develop demand-oriented-qualified skills to the industry, small and medium businesses, trade and services (Nassar, 2003). The burden for training of young girls is facilitated by the government and the companies. The home provides the trainees as from the age of secondary education. The government through the ministry of education provides qualified teachers, pay salaries of personnel involve, adopts the theoretical part of training, participate in practical examinations and issue certificates. The companies, through the Investors Association contract the trainee for training in the factories, over cost of training, participate in choosing needed trades, formulate the corresponding curricular, and participate in examination. The German

Technical Cooperation on their part provide long and short term experts, and supply funds and technical assistance.

This system approach to technological and manpower development is what has booster enrolment of females in non-traditional trades because job after training is guaranteed, there is relevance in training. The industries train in the needed trades. Cost related problems are not borne by parents thus the young girls can stay longer on training thus can attained good level in technical industrial education. Industry and education institution interaction are key factors for success in any vocational and technical education system. Such a practice in skill training gives a student an opportunity for students to get acquainted with industrial environment as well as get an insight into the duties and responsibilities of a technician or engineer. This type of interaction prepares the students for employment particular in industry and enables him to appreciate the profession for which he is being trained. Training and placement office makes all these transactions possible.

2.5. Socio-Cultural Obstacles to Female Access in TVET

Gender base discriminations that lead to inequalities are central issues of global concerns and equal access to education have been identified as a measure that could bridge the gap. Silverman and Pritchard (1996) suggest that in the 21st century to be productive all members need to possess some problem solving skills strengthened in hands-on education, critically thinking and informed decision making. The International Technology Association (1996) also suggest that as we move forward in the 21st century and as our lives become more dependent on technology, technology education courses should be made available to all students both males and females. The Millennium Development Goal 3 includes as its target the elimination of gender disparity in primary and secondary education, preferably by 2005 and at all levels of education no later than 2015. These measures and more are suggestive of that fact that disparity in education is evil and must be eliminated. The persistence of gender imbalance in technical and vocational in Cameroon is a clear indication that the totality of the goal has not been attained. The factors that may be concern with this disparity may be many but for the purpose of this study, we will examine some socio cultural factors which include gender stereotyping, parental influence and customs and cultural practices.

2.5.1. Social Stereotyping Attitudes

This attitude can be defined as the general perception of men and women of girls and boys by society focusing more on their sex than abilities or other potentials. Women are stereotyped as being less intelligent, family focused, unwilling to support long hours of work and travel, lover

of soft skills, hates calculation, has less strength, scientifically illiterate amongst other attributes (Fiona, 1993).

2.5.1.1. Stereotype on female educational potentials

Stereotyping of men and women is one of the social processes that have set the greatest limitations on human resource capital development over time affirms Zuga (1996). Stereotyping of women increases a negative perception about their ability to contribute to development. This also directs their career choice by parents and themselves to the socially considered 'soft skills' designed to add valued or reinforce their traditional roles of 'good wife' and 'mother'. In the same light, UNIGEI a UN structure whose activities are centred on improving girls' access and participation in education in Science, Technology, Engineering and Mathematics (STEM) affirms that, female participation has registered relatively low rates over the years in STEM courses and fields owing to gender discrimination practices. Sex stereotyping is an aspect of discrimination and is a violation of the rights of girls and women (CEDAW, Article 10). Stereotyping involves differences in the ideas and belief held about male and female. In career orientations, stereotyping will imply 'male adequate' and "female adequate" occupations.

Sex-stereotyped occupation of the male over the female is a culture which has reinforced the notion of women into believing that is it a taboo to venture into an occupation that is the preserve of the males. This no doubt has affected marriages, as women that have ventured into such vocations find it difficult getting married. Gender differential treatment is extends to classroom lessons. While the boys are expected to do better in mathematics and science, the girls are exposed to do better in home economics and certain arts subjects (Nnachi, 2008). Thus intellectual psychology of depression is developed against female potentials. Women and girls are brought up to believe that science is meant for boys and the teachers (most often males) do no encourage the girls to work hard in these areas after all it is not meant for them.

Stereotyping hinders the attainment of The United Nation Education for All (1999) initiative that remarked that, girls and women lag far behind boys and men in many aspects because of the perceptions that society has in regards to female intelligence and their capacity in matters of learning. Education is a higher level need which many people believed females cannot attain and thus their undisputed place should be the 'home'. The following statistics according to the 2002 UNDP Human Development Report shows proofs of the stereotype construct on female competence :

- Two out of three of 110 million children in the world who do not attend school are girls and there are 42 million fewer girls than boys in primary school.

- Even if girls start school, they are far less likely to complete their education.
- Girls who missed out on primary education grow up to become the women who make up two thirds of the world's 875 million illiterate adults.
- A six year old girl in South Asia will typically spend six years in school, compared with nine years for boys
- Living in the country side widens the gap; a girl living in a rural area is three times more likely to drop out of school than a city boy.
- Girls make up 60 percent of children not in primary school.
- Of the 113 million children not in school, 97 percent belong to developing countries.
- 93 countries, whose population makes up 39 percent of the world's poor, do not have data to be able to ascertain children access to education.
- Of the 21 countries in Sub-Sahara Africa with data, fourteen are far behind their primary education target or have deteriorating enrolment.

These statistics present an unhealthy base for an effective and equitable take off for females in education in general and science, technology, engineering and mathematics in particular. This is because girls who do not attend school at all cannot be found to offer engineering courses. Girls have been intellectually suppressed for too long such that they evaluate themselves as scientifically unfit and consequently shy away from these fields.

Recognizing the importance of science and technical education for women the Harare Declaration (1982) recommended that the educational policies in Africa should take as priority the improvement of the command of science and technological knowledge and that government institute a strategy of national mobilisation for science and technology at all levels of the educational system (UNESCO,1982). This conference of African Education Ministers recognised the fact that for development to proceeds equitably, all sectors of the society must be involved in the choice of science and technology. The fact that women are under-represented in these fields represents a significant loss of resources and a slow down on industrialisation.

The Liberal feminists (Acker 1987, Stromquist, (1990) advocates strongly that women must obtain equal opportunities and equal rights in society. Education, they opine is positive and improves the welfare of women; an advantage which is spread to the entire population of the society. In conformity to this assertion, The Food and Agricultural Organisation (FAO) adds that investing in human capital in general and in female education in particular is one of the most effective means of reducing poverty and bringing about sustainable growth. It further points out that the education of women stretched out to impact quality of life in many areas; including,

increase life expectancy, (stemming from better nutrition, sanitation) reduced infant mortality, good total fertility rates and so on.

Huyer (2003) in Gender, ICT and Education, opines that barriers that set out to reduce female participation in science and technology education are connected with gender stereotype of female intelligence. She remarked that, the perception of teachers and parents that girls and women are intellectually unsuitable for sciences and technology was surmounting in her research findings. Consequently, teachers tend to pay less attention to girls in mathematics and science classes, girls received less support from their parents; girls were intimidated by boys who believed Science and technology is not their place to compete with them and so on. She further opines that the imposing masculine image of science and technology in curricula and media and the narrow focus of technology to connect to life outside the classroom have contributed to scare girls from giving a try to this much needed knowledge and skills. This is suggested have caused girls and women to be poorly placed to benefit from the knowledge economy because they have less access to skills training and development which will enable them gain employment in industries, commerce and communication.

In 1996, a UNESCO, special project code named, Scientific, Technical and Vocational Education of girls in Africa was launched with the aim to reduce disparities in these fields. The overall objectives of the project aim :

- To improve the access of girls to scientific, technical and vocational education
- To break the barriers for girls in secondary school, notably by improving the quality and effectiveness of STVE
- To make an impact on the attitudes and stereotypes of teachers, which prevent girls from taking advantages of the current opportunities in science and technology
- To promote positive image of women in science and technology
- To sensitize police makers, parents, employers and the general public about the ways women full participation in science and technology can make a positive difference for current and future generation.

These objectives portray the important role of STEM education in development and danger of leaving out women and girls can be devasting. Discoveries in science and technology bring about new ways of doing things and are useful if they are adopted and adapted by a majority of the population. The dangers of stereotyping knowledge and skills leading to differences in occupations is thus daunting on the development of communities that considered women fit only to their gender role related jobs.

According to Fiona, (1993) communities, interpret biological differences between males and females to create binaries which define behaviours that are considered appropriate for men and women. This goes a long way to determine men's and women's different access to right, resources, power, education and even healthbehaviour. The specific nature and degree of these differences vary from society to society. However, they typically favour men, creating imbalance in power and gender inequalities in all societies. Philosopher Foucault cited by Dine,(1993). Affirms that humans are the object of power, and power is what determines individual attributes, behaviour, and attitudes that influence their contributions in development. "*People are a part of an ontologically and epistemologically constructed set of names and labels*" (Dines, 1993). Being female, characterised one as a woman and being woman signifies one as weak, too emotional, irrational and is incapable of action attributed to men". This therefore, implies that there are actions for men and actions for women and society should ensure the respect of this statuesque.

Waite III (2003) seeks to find out the factors that prevent female students from enrolling in technology education courses at Richfield Senior High school. The results of the study revealed that the factors; Sense of self and social fitness was a prominent reason for about 90 percent of the females of the survey. Over 300 girls out of 400 girls that were involved in the study expressed fear relating to many aspects such as, being the only members of their gender offering technical trades, perceived the technical workshops to be dangerous and dirty places for girls, or viewed it as where real life problems can be solved. Women's self concept has been an issue of constant debate and this has raised several doubts on female capabilities in many spheres of life. Sense of self is not innate, it is cultivated and the society plays a principal role in this issue. The home, peer group, teachers and other adults in the community contribute a lot to how females build their self-image. Many social scientists agree that Literature, music, pictures, history have not been favourable to women. They project a less admirable work image of the women; as weak, less intelligent and fit only for the reproductive role. Fiona says the success stories of women are often not recorded for history. The social apprenticeship of women in such ideologies have internalised in them the belief that they are very unsuitable for technical trades.

Stromquist (1995) in his survey also revealed that female students lack support from influential persons such as parents and peers when it comes to pursuing interest in non traditional trades owing to gender stereotype. He remarked that generally, women are discriminated against on basis of their sex, which most society defined as weak, fragile, tender, not appropriate for power, decision making and leadership and too emotionally and family centred. The male gender is highly favoured in sex role determination. Eccles (1989) as cited by Sophia (2002) affirms this claim as he declares that, parents believed that boys have an innate ability for science

and mathematics which girls lack and girls can only excel if they work extra hard. Male students were reported to receive more encouragement and information from the guidance office staff, parents and peers in relation to their studies than girls. Support is important in building self image because it denotes acceptance and the fulfillment of self worth. This ignites motivation and endurance in learning which girls lack to pursue technical trades. Since men are the ones in control of power, it is they who then attribute to women, the different characteristics or traits in which the females are socialised into. The home initiates the child into these social expectations, internalise it through language, parental couching and mentoring as well as cultural belief and customs. These defined attitudes are further developed in many ways by other social structures such as the school, church, peers group and even the state either consciously or unconsciously through strategies such as division of labour, classroom interaction, teaching approaches, just to name but a few.

Dines (1993) declares that gender and sex are more of verbs than nouns. She says gender is politically and therefore socially controlled. Rather than women being something one is, it is something one does. Action is therefore what qualifies a sex. In support of this notion Feminist Simone de Beauviour (1993) affirms that 'one is not born a woman, one becomes one'. Woman, therefore, is the manifestation of the traits assigned to this gender, not the sex. Consequently one can hear a man being referred to as a woman, if he displayed any assigned famine traits. In confirmation, Eccles (1989) says parents belief that boys have an innate ability for sciences and mathematics which daughters lack and can only excel if they work extra hard.

Ackar (1987), in a research conducted on the study of gender discrimination remarked that stereotyping and discrimination have created a situation where women are valued less and as such have less chances to education, fewer careers opportunities, less likely to gain occupational promotion, less in political and economic leadership positions and so on. These have limited women's progress especially to traditional sex functions of good wives and mothers. Valuing women less in almost all human activities is society's greatest pitfall as this denies the contribution of over half the population in development.(UNESCO, 2010). According to Ban Ki Moon (2010); affirms that; "*The competencies of woman are the highest, most valuable unexploited resources of many communities owing to sex discrimination"*.

Men's Perception of women in masculinedominated occupations or trades is pivotal in sex role definition. According to Endeley et al (2004), reveals that the many men had little idea about women's emancipation and that others said it is a western notion grossly inadequate in an African context. Yet still, others believe it is a notion meant to reverse family values and bring

disunity. These reveal a great deal of negativity that men have as concerns women and their activities. Male perception of women especially those who dare in male dominated trades have been less encouraging and scaring. Most men have been resistant to accept women as partners for development (Ngassa, 1999). They hold tight to their culturally defined roles that placed them as overseers on women Endeley et al (2004, pp.996-207). Several reasons account for this, including ignorance, the persistence of cultural mal-practices and the ambiguity on some legal aspects.

Lack of knowledge is a serious handicap to accepting others' views. According to Hassan, (2002), in 'Gender inequality in industrial and technical education in Nigeria: parents' perspectives in the 21st century' reveal that most parents are still unaware of what equality and equity in education stand to benefit women and the society as a whole. The inclination on the female sex to mean weakness, less wise and other negative ideas were high among parents with low educational level. However, the new generations of educated parents were revealed to have taken a different view from those of their parents and grandparents whose decisions about women and girls were mostly guided by religion, tradition and cultural beliefs. For example, the cultural practice of the payment of bride price which places on women an economic value and thus gives right to the one who makes the payment to treat her as a purchased good contribute to influence such wrongful notions. The Ministry of Women's Empowerment and the family in Cameroon has embarked on the fight to end violence on women for the past two decades through sensitization of the male and female that we are but partners in development.

2.5.1.2. Stereotype on Female Gender Role

The World Health Organisation (WHO) defines gender as the results of socially constructed ideas about the behaviours, actions and roles particular sex performs, the benefits, values taken up and exhibited by them as per the agreeable norms of society. This implies that the personal opinion of the person is not taken into consideration in gender roles assignment. When a child is born he or she has a biological sex but not social gender. Socially, a great deal of nurture relating to social context is learnt as he or she grows. Society provides a string of prescriptions, templates or models of behaviour appropriate to the sex or the other (Fiona, R 1995). This process socialises the child into belonging to a culturally specific gender. There is huge incentive for the child to concede to their socialisation, with gender shaping the individuals' opportunities for education, work, family sexuality reproduction, authority and how to make an impact on the production of culture and knowledge. (Fiona, 1995, Edson, 2002, Alam, 2007). Adults who do not perform these ascribed roles are perceived as social deviant or improperly socialised.

The traditional female role of wife and mother is central in the development and determine almost all aspects of women life. Many research studies in the domain of gender and development reveal that girls' education turn around these perceived gender roles and has over decades constitute a hindrance because society has misinterpreted these natural function to mean weakness and subordination. This has been reported to be responsible for the delay in the attainment of female equality to opportunity and equity. According to UNDP (2002) report girls make up 60 percent of children not in primary school worldwide. Of the 137 million school age children not in school 97 percent belong to developing countries. This shows that female illiteracy is a global issue that need urgent intervention. According to Huyer (2002) women illiteracy affects the three basic types of literacy necessary to participate in science, technology and engineering, which are; functional literacy, the ability to understand and use common channels of communication, functional technological literacy the kind of literacy require to operate cell phone, internet connections and so on and scientific literacy, the ability to respond to the technical issues of personal and national life daily.

Hoftman-Bathes et al survey of 21 African Countries including Cameroon, remarked that, the education of boys is given preference over that of girls since girls will marry and transfer the knowledge, prestige and income into the family into which they are married. Consequently, it is her new family that will benefit from her education. With this notion and the fact that the boy child is more family bound, most parents prefer sending but boys to schools to every height they may attain as a means to ensure inheritance and old age care. Another remark was on the girl's domestic responsibilities. Girls have a large role in family welfare. According to Brock and Cammish (2012) there is greater need for girls rather than boys' labour at home. Many parents keep their daughters at home wherever there are some chores to do such as cooking, selling, farming, taking care of siblings and so no.

The school is one of the social set up where gender roles are highlighted consciously or unconsciously through the curriculum and even extra curriculum activities. Sophia Huyer,(2007:7) reveals that schools develop and reinforce sex segregations, stereotypes and even discrimination which exaggerate the negative aspects of sex roles, when they could be trying to alleviate them. Wynne and Rosemary (1997) portray that classroom interaction as an organisational principle may affect pupils perception about subjects as well as occupational suitability. Behavioural differences resulting from classroom interaction may create conditions where pupils of one sex or the other may come to believe they are unsuited for certain occupations or subjects. This occurs in a number of ways including, teachers' attitudes and sex,

pupils sitting positions, whole class interaction, group work sharing, (desk-based or practical tool-based) and so no.

Psychologist Vygotsky (1978) affirms that social interaction plays a key role in the determination of learning outcome and that the teacher effective use of communication skills can enhance girls' involvement in areas of studies where girls are remarked to perform poorly. On the contrary, research reveals that statements of female reproach abound in literature, whereby girls are meant to feel inferior to ascertain their potentials. Here below is an example of such derogatory statement alter by a male science teacher "*One thing I hate and detest is ignorant females and this school is lousy with them these days. Suppose I'd better address myself to you lads. Don't want to see that ugly lot in my lab*" (Delamont, 1990:58).

Plan Cameroon (2012) report on the gender education programme 'Because I am a Girl' reveals that the use of unruly language abounds in Cameroon classroom setting. Hard and abusive words such as 'you fool(s), yam heads, dull, good for nothing, and so on are commonly directed to girls during mathematics, physics and other science courses. Male teachers especially are noted for such unfriendly behaviour, who believed that boys rather than girls are naturally endowed to do the sciences and engineering options. Such derogatory pronouncement makes individuals feel uncomfortable even if they are not explicitly told that their presence is unwelcome and may have both short term and long term consequences such as absenting during course periods or withdrawal from the course.

Flander, (1970) opines that classroom interaction is teacher initiative, pupils response and teacher feedback and that two third (2/3) of the talking comes from the teacher and one third (1/3) from the pupils, chiefly by responding to the teacher. Given this premise therefore little talking occurs between pupils and as such it is the teacher who can cause a significant impact on pupils' interest. This therefore means that, teachers can use teaching time and techniques to inculcate positive behaviour that can alter stereotyped ideas in girls' learning.

Operating in this negative social attributes create a lack of self confidence among girls, in their ability and motivation to opt for trade and courses which are dominated by males. However, Hoft-Bathes et al (2008) suggest that education has the potential to challenge stereotype about male and female role, to offer alternative ideas and to equip young women to pursue a range of opportunities. When this occurs, girls will receive positive encouragement to try TVET, male dominated trades. This will dismiss the conception that girls cannot do well in sciences and industrial trades.

In a research conducted by Egun and Tabi (2010) it was observed that societal stereotyped on female gender and the conflict between work and family responsibilities, customs attitude and other behavioural decisions play a significant role in the obstruction of women's career choice in TVET. They agreed that sex stereotyped occupations of the male over the female is a culture which has reinforced the notion of women into believing that it taboo to venture into an occupation that is reserved for the males. This no doubt affects marriages as women that venture into such vocations find it difficult getting married.

Marriage leading to motherhood rather than professionalization has continued to remain a mother vocation for women and serves as a bench mark in defining women. To fear being defined as irresponsible many women have shun away from following their desired careers because of marriage. Educational attainment without marriage makes a woman incomplete in our marriage centred culture. The marriage ability of women is affected by many factors including the level and type of education leading to various careers. Thom, Pickering and Thompson (2002) study on the biggest obstacles for women to entering technical field, report, that young women perceived that entry into technical field will make them to be viewed as less feminine and deviant both by their female peers and other men. Consequently, female students choose where rejection is minimal- career areas of their traditional gender role.

Similarly Ungei, (2002) found out that even in countries like Brazil where over half the students at the tertiary level are female, girls form only 34 percent of the students of the students who join the natural science courses that include mathematics, engineering and computer sciences. Parents in Malaysia were reported as denying their sons from marrying educated girls. Education they believe will cause girls to resist marriage and challenge male authority. The question here is, given this perception how much denial will girls attract if they dare in industrial trades? For this reason Hamisah (2005), posited that most women are involved in socially oriented jobs that can break even between family responsibilities and professional demand. The family focus orientation of women is therefore to ensure that their jobs can permit them to establish a balance between work, family and love.

Mordi (1993) comments that gender differential treatment based on their roles, extends in many areas including classroom lesson, occupational site, leadership evaluation and work potentials. While boys are expected to do better in mathematics and the sciences, girls are expected to do better in Home Economics and certain art subjects. This presents a situation where intellectual psychology of depression is developed against female potentials. Consequently, as observed by Nyula (2001), girls are brought up to belief that subjects such as mathematics, sciences, engineering courses and so on are meant for boys and the teachers most often do not encourage girls to work hard in these areas.

Mordi (1993) equally recognises that perception, belief system, existing knowledge, life styles, life goals, needs and drives influence choice and entrance into occupations and professions. Thus, giving meaning to human experience and the manner in which people think, feel and act within their environment. For example, Cultural attributes that reward men who act assertively, simultaneously, punish women who exhibit similar behaviours. Women's performance and communication styles are judged differently often less than their male counterparts. This is because women are often stereotyped as family focus, lovers of soft-skilled, scientifically illiterates, unwilling to travel, less instructive and so on. This has real career consequences, resulting to the devaluation of soft-skill been paid less, or nothing at all as evident in the unpaid tedious, stressful, and burdensome demands of household chores and child rearing..

2.5.1.3. Stereotype on Female Identity

The strong battle that women and girls have to fight in this present generation is to combat the myth and stereotype about their own selves and to break the walls that prohibit social cooperation and group gain (UNIGEI, 2007). Education should provide the means to eliminate oppressive social practices, thereby creating an empowering environment towards a vision of critical democracy that include all people. The language of power must be decoded, the hidden curriculum of dominant culture should be discourage and people everywhere should complicit the perpetuation of unequal education. EFA (1995). These powerful pronouncements are geared towards reawakening in the women self confidence lost as a consequence of discrimination and stereotype.

According to sexologist Money (1985) female identity has remained a factor of contingency because of their dependant identity either as daughter or wife. The specific social roles and expectation that society affixed on the specific roles have a great impact on how women are viewed both as individuals and also in relation to their collectivity or social category. Social identity creates a common culture amongst members of a defined gender. According to

the social identity theory, an important component of the self concept is derived from membership in a social group or category. This is demonstrated by group processes and category and how inter-group relationship impact significantly on individual self-conception and behaviour. O Neil (1981) developed a list of traditional assumptions about male and female that has perpetuated aged old discriminations about these two groups. These assumptions underline the masculine mystique that defined females. They are;

Traditional female traits include, affectionate, cheerful, compassionate, eager to sooth hurt feelings, gentle, sensitive to the needs of others, soft spoken, worm and yielding. As against traditional male traits which include; acting like a leader, aggressive, athletic, competitive, dominant, forceful and makes decision easily. These catalogues of traits portray the woman as the house or family type and the man as the outdoor type. Consequently, industrial like jobs that require both a higher demand of human energy and time are considered not appropriate for women.

The concept of being woman is therefore considered to have more challenges due to society not only viewing women as a social category but as a felt senses of self, a culturally conditioned or constructed subjective identity (Money, 1953). The subjective identity of women affect women's participating in all spheres of life and only persuasive education has been recognised to alter the self-concept women have about themselves. Gender differences is merely a construct of society which it uses to enforce the distinctions between males and females, and which later on is transfigured into a vehicle for the social division of power. Gender allows for the domination of masculinity over feminist through the attribution of specific gender related characteristics. Powell (1999) has established a list of such attributes as follows:

- Men are biologically superior to women and therefore, have greater human potential than women.
- Masculinity power has feminist is the superior dominance, more from gender identity
- Masculinity power dominance, competition and control are essential to proving one's masculinity
- Vulnerability feelings, sad emotion to men are signs of feminist and are to be avoided
- Inter personal communication that emphasizes human emotions, feelings, instruction and physical contacts are considered feminine and are to be avoided.
- Rational-logical thought rather than intuitive and emotional expressions are the superior form of communication.

- Sex is primarily a means to prove one's masculinity, affectionate, sensual and intimate emotion are considered feminine and less valued
- Vulnerability and intimacy with other men may imply homosexuality and effeminacy men's work and career success are measures to their masculinity.

Men are vastly different and superior to women in career abilities; therefore men's primary role is that of bread provider whilst that of women is caretaking of home and children. How are these traditional gender roles related to career orientation? The Beijing platform for action(1995) article 72, insists on the creation of an educational and social environment in which women and men, girls and boys are equally treated and encouraged to achieve their full potential, respecting their freedom of thought, conscience, religion and beliefs, with educational resources promoting non stereotyped images of women. This clause about two decades is yet to attain 50 percent implementation. The MDG mid-term evaluation on goals reveals this truth. It is worth to remark that though education is important to everyone it is especially significant to girls and women as a means of acquiring knowledge, skills and self-confidence necessary to participate in the development process.

In a study of social stereotypes and occupations conducted by Ceijka and Eagly (1999), 189 male and female colleges were asked to create 80 occupations on gender stereotyped attributes and to rate either the average man or woman on the same attributes. The results showed that the female dominated occupations where feminine personalities and physical attributes were thought more essential for success. Likewise the male dominated in occupations where masculine personalities and physical attributes were considered to be essential. Here 'soft skills' occupation was attributed to women while hard skills occupations were attributed to men.

In a related study of women only, Cooper(1997) examined the impact of ratter sex, gender stereotyped jobs and gender stereotyped rates personal characteristics on a job promotion decision, discovered that female employees with masculine characteristics were evaluated on most promotable regardless of the gender stereotype on the job. It was further concluded that it was rates personal characteristics that influenced the promotion process not the sex. These few examples of studies indicate how gender role attributes about the roles of men and women in the society affect how they are evaluated for their abilities in career options.

Gender stereotype ideology has played an important role on maintaining the inequality between men and women, particularly in the labour market. Ramah (2005) stated that the jobs suitable for women include teachers, doctors, clerks because of the characteristics of women that include; patience, gentle attentive and motherly. Clerical work does not involve rough work and

is considered easy, light and with fixed working time. Other jobs also considered suitable for women are; nurse, accountant, secretary, babysitter and tailor. Boserup (1987) who conducted studies in Latin America, Middle East, East and South Asia and Africa, stated that there are three levels of occupations among women. Her study found out that in industrial countries, particularly west Europe and North America, there is high rate of women in clerical work than in professional works. In Latin America the pattern is different where more women are in professional jobs than in clerical jobs. The distribution of female workers in Africa is at a lower rate in both professional and clerical fields.

Law (1993) found that male and female students in form four have a high aspiration towards careers which are traditionally classified according to their respective genders. Most females were discover to be interested in jobs that require direct relationship with the public such as nursing, trading, taking care of children or social work. Males on the other prefer mechanical area. According to Havimisah (2005), most women who are involved in the area of engineering are more interested in civil, electrical and chemical engineering. This is because there fields of engineering do not require physical strength and involve a more conducive working environment for women.

At adolescence, that is about the age of 16 years students begin to think about their future career that they are interested in. In general the male students are more inclined towards the academic areas while male students are more interested to the vocational field. Confidence is a mental steam necessary to take action and to sustain it. It may be generated from within but it requires social support to make it productive. According to farmer et al (1995) among the factors that hinders women's involvement in non-traditional careers. The main reasons he advanced why women are assumed not suitable to do these jobs are because women have less required physical strength, long working hours, impermanent work place, negative image and residence (p.9; 97). According to Persone et al (2001) opines that some adolescent girls tend to be self-conscious and erroneously believe that is not feminine to be brilliant in technical, scientific or mathematical matters. Women's lack of confidence in their ability occurs because women often face gender discrimination, sexual disturbance at school and work, and obstacles to excel to high position. This causes them to be timid to take the challenge.

Powell (1999) offered a summary of the potential of gender discrimination that affects gender identity of women. They are social system centred, situation centred, and person centred factors. While social system centre factor have to do with school and work place expectations. Patriarchal social system, involves direct discrimination by a dormant group (male) and the

stereotyped of female traits. Situation centred explanation will have to do with decision maker preference, the use of language and communication styles and persons centred factor is concern with sex differences in task oriented behaviour, interest in education, the effect of family responsibilities and the self-sense of determination and perseverance. Therefore, the strength and conviction which women need to liberate themselves from institutional barriers are person-centred related. This is because we are what we define ourselves.

According to a study conducted by Singer and Love (1988) which investigated gender differences in self-perception of occupational hierarchy and in law enforcement officers. Females indicated less favourable self-occupational images than male officers. Though both sexes however, indicated similar levels of psychological well-being, job satisfaction and job involvement. Research have found certain attitudes to be associated with strict female gender stereotypes, such as shyness, naivety, gentleness, soft spoken, and so on. Male domination and the wrong perception many men have about female emancipation have made many women to feel inferior and dejected. (Putman, 2001),

Obura (1991) exclaim that traditional female or male roles are deeply ingrained and glorify in all local languages, the mass media and advertising and that the society perception of women is for the most negative with the best women as mothers and their capacities going unnoticed and unrewarded. In the book Issues on Gender and development published by the department of women and gender studies of the university of Buea, Cameroon, voI, (2004, p. 88). Nyansako Ni Kwo says women are robbed of their self-worth by practices such as; food taboos, sitting positions, regulated public behaviour, heavily censored and controlled participation and polygamy. Polygamy he reiterates is one of those debasing customs which has held women down. It is a demonstration of male chauvinism and portrays the low social positions of women as one man may marry as many women as his wealth permits. Unmarried women and single mothers are stigmatised consequently young girls are prevented to engage in any career that may handicap their process of marriage. Since TVET is considered a male prerogative, entering such fields is considered as a challenging to the cultural status quo.

The persuasion of low self-esteem, inferiority complex and refusal tendencies have been proven to be based on fear perpetuated by a culture that is too critical of women's action.This fear is generated from several factors including :

- Women are still being regarded as economic objects rather than economic operators.
- Women sex role socialisation defines them mainly as housewives and mothers. This constitutes a barrier for free participation of women in the labour market (Connell, 1995).

- Men are considered to be economic providers, rational brave, tough and aggressive.
- Masculine image in learning and work environments still dominates TVET.
- The typical exclusion or marginalisation of women in organs of decision making.

All these factors results in goals, programmes and projects that neglects the valuable contribution of women. Some belief questioning gender identity may cause a shift in both men and women sense of self.

2.5.2. Parental Attitudes

Parental attitudes can be defined as the index of parental involvement in the upbringing of children. Brock and Cammish (1997) identify four basic roles of parents in this regards such as parent as educational decision-makers, parent as teachers, parent as caregivers and parent as advocates.

2.5.2.1. Parental Attitudes in Decision Making

Parents play a significant role in shaping the direction or part way which children will follow in later years. They do so in a number of ways as portrayed in their roles. Turnbell (1983) identified four basic parental roles which are; parents as educational decision maker, parents as teachers, parents as care givers, and parents as advocates. These roles are so central in determining the educational outcome of children and since education is a function of their future career, Tumbell (1983) opines that it is essential that the home and the school work closely together for the optimal achievement of the child (learner). Korth (1997) in recognition of the role of parents opines that parents should be recognised as the major teacher of their children and the professionals should be considered consultant to parents. Atkinson (1983) says parents are central in providing balance necessary to build motivation in learning. These notions support the important role of parental involvement in the intellectual development of children.

Parental attitudes, many social scientists agree is not an isolated function. It is the outcome of a collection of factors which parents considered worthwhile in the progress of their children. In many societies children's education and behaviour is shaped by social expectations. Stroquist (2002) identified two major factors which are; family life expectations and work prospects. These factors are so prominent in girls' formal education leading to career choice as parents seek to strike an appropriate balance between work and life. The degree to achieve this in turn depends on familial related factors such as parent's age, level of education, occupation, religion, tradition and culture and other social parameters. Parents' socio economic level is pivotal in the decision they take concerning their daughters education. This is because it provides the vision and the means to realise it.

Ali Idris (2002) opines that familial factors including parents level of education, age, and economic status, perception of the importance of girls' education, early marriage and early pregnancy, household chores and so on were some of the factors revealed to constitute barrier for female participation in non-traditional fields. Cammish and Brook (1997) reveals that in Cameroon family life expectation is pivotal in the decision making process of female education due to the marriage centre culture. The common destiny for all females is marriage (Gale, 1995) and it is duty of especially the mother to ensure that her daughter succeeds in this assignment or else bring disgrace to the family. Socialisation of females therefore is centre on preparing girls to take active part in family life and formal education should also respect this statuesque. This also affects the degree of parental and familial involvement in girls' education as it raises the question that if girls are to get married how then will their education profit her family?

Ajayi and All (2010) finds out that parents perception about their daughters enrolling in industrial and technical education programs in the 21st century is influenced by parents age, level of education and belief about girls studying industrial trades. The influence of custom and traditional beliefs held about female in masculine dominated trades portrays that a majority of the parents still held view that it was not important for girls to offer technical trades. And that even though religion and tradition does not forbid them it is considered indecent for girls to operate in the technical industrial environment. Tarf (1992) opines that parent's psychological wellbeing and the ease or difficulties within which they decipher the cues that facilitates the socialisation process influenced the personal and social development of the child. It is the parents who exert a major influence on the development of the child from birth and probably all through life. Parental attitudes are therefore crucial in matters relating to children education in general and female education in particular.

Parental influence on their children educational and occupational choice is wide, varied and of different depths. Parents from different groups and background (socio, culture and economic have different types of influence that they exert. Fonlong (1986) has concluded that the influence exerted by the educational system is limited given the strength of parental influence. The decision of who goes to school, what type of school, what school course to follow, when, where and for how long, is the prerogative of parents, most often without the consent of the learner. Many studies have revealed that the overriding influence of parents, who usually than not operate on the basis of their own limited education and other social standing have limited greatly many children from becoming what their potentials could have permitted them do. Girls are mostly affected because of their perceived gender roles and characteristics that

direct parental attitudes. Sander (2008) notes that traditional beliefs and customs held about gender roles and the characteristics influence parental attitudes.

2.5.2.2. Parental Attitudes in Female Socialisation

Haralambos (1987) defines socialisation is the process by which individuals learn the culture of their society. Primary socialisation, probably the most important aspect of the socialisation process takes place during infancy, usually within the family. By responding to approval and disapproval and copying the examples of parents and other senior members of the family, children learn the language and many of the basic behaviour patterns of their society. This has significant bearing on their outlook of life as a whole and education in particular. The According to Badwin Legros (2004) the perceived ideal roles and characteristics of women and girls influence how girls and boys are socialised in the home, community and school. Because females in general are considered physically weaker and less capable than males, they are often overtly protected and supervised to keep them from what is considered threatening to their safety be it physical, sexual, mental and emotional. In this, females are control by un-ending dos' and "don'ts".

Brock and Cammish (1997) affirms that gender perceived roles are the bases for socialisation influencing parents as educational decision makers to act in a variety of ways including even to extreme the not sending of girls to school. They revealed that some parents are reluctant to send their daughters to school for varied reasons. Such as the belief that education and school could have a corrupting influence, causing them to reject what is considered the statuesque of society. Society expectation of women is to get married, have children and care for the family (Ngassa, 2009). Women's formal education is belief would delay and interfered with the proper execution of their traditional roles of mother and wife. In some cultures like the Bamelikes it is reported men were reluctant to marry educated girls, who may challenge their authority.

Females are more socially control than males for fear of physical violence and sexual harassment of girls that may occur in school and on the way to or from school. This constitute is a remarkable obstacle in female education (Cammish and Brook, 1997). Sexual abuse from peers, male teachers and other males of the community on girls was registered as a predominate factor occurring in Cameroon. Owing to the country's vast rural sector and its enclave nature, schools are situated at long distances, with bushing and winding paths. Parents who are worried about their daughters safety prefer to keep them at home than to expose them to these hazardous condition. In connection to this, girls are socialised to keep away from boys as much as possible. They are overtly rebuke if in male company often and this leads girls to feel alienated by males who may be reluctant to accept them in their gender ascribed fields and by her female peers who sees them as deviants.

Work and play are two important activities in the socialisation process. According to Huyer (2003) the activities assigned to girls and boys, the kind of work they do and the way they play have an impact on their education. Girls for example, are over loaded with household chores; they are rarely the ones sends to the shop to do shopping nor are they allow to playing outside the home for long periods of time, as their male counterparts. This denies girls the opportunity to explore and experiment with devise activities and situation outside the home which are useful in the TVET curriculum. The manipulative activities of boys is tolerated and even rewarded while girls who manifest these tendencies are usually rebuked. If a boy damages a Television set in the cause of operating it, parents may not be hard on him, as would if the girl did same. This attitude kills girl's creative spirit and limits their socialising skills as they are being too home focus and supervised.

Research reveals that in some cultures, girls are expected to be obedient and socialized to feel that boys are and men are in someways their superiors. North West Region of Cameroon, for example, after a certain age, girls are not expected to look at a man directly in the eye and are expected to appear humble and respectful before men. This attitude and subsequent socialisation of girls has a number of effects, on girls learning in that it makes girl shy, timid and less courageous (Camish and Brook, 2010). These constitute an aspect of intimidation which makes it difficult for girls to fully benefit from the participating, discovering methods that are recommended in TVET learning and teaching because they are reluctant to ask question, not participate fully in discussions or work in groups. TVET technical industrial trades being male dominated are scarring for girls who are brought up to considered men as superior.

Owen (1991) reveals that in most cultures women found it difficult to exert authority over men. As a result many are vulnerable to physical and sexual harassment and abuse of men. Fear and the lack of confidence, skills and knowledge about sexually related issues, girls in situation of sexual abuse are shy to report men who rape them or are reluctant to denounce act of social violence. This exposes girls to unwanted pregnancy and STDs and may result to drop out from school. Plan Cameroon (2012) report on their educational programme "Because I am a girl" reveals that the lack of a firm foundation on sex education by parents on their children has been reported to be a weakness in the socialisation process. Sex related issues up till date is considered a taboo for family discussion. Parents are shy to tell their children about their sexual development. This situation exposes girls especially who probably because of quick emotional development learn from peers and other sources that may have a negative bearing which may result to early pregnancy, HIV/AIDS infection and other STDs. Permitting girls to enter into

male dominated trades may aggravated sexual harassment most parents expressed this worry in a study by PLAN CAMEROON (2012). As a result parents prefer their daughters to enrol in female dominated trades.

2.5.2.3. Parental attitude in female economic role

Girls and women constitute a major economic arm in especially poor and rural families. The mother's role of child rearing and family welfare is shared with their daughter. Girls formal education is hindered by this fact as both time and energy are spent on house chores than on academic work. This perception of females to become wives and mother denies girls and women the opportunity for formal education in general and TVET in particular (UNESCO 2010). Ajuyi, Kassim et al. (2010), reveals that many parents believe that formal education is not necessary in order to prepare girls for these expected roles as they can learn from their mothers and other member of the communities. Still most parents considered educating girls are waste of money and time because they will eventually he married off and their education would therefore only benefit their husband and the families they marry into. Money spent on the girls education would thus be considered lost to the girl's family. On the other hand, the expectations that boys will become 'breadwinner' of their future families, many parents feel boys should for this reason be provided with every advantage to help them fulfill this role. This includes educating them as far as possible, and supporting them in all ways possible.

Asomaning and others (1994), reveals that, in some cultures the birth of a daughter is referred to as wealth all because of their economic role in the management of the home enterprise and the bride price her marriage will bring. They write *"He is poor he who has no daughter*". Female labour is an indispensable activity in the survival of especially poor and rural families. Girls labour is needed for agriculture, domestic and marketing task. On the other hand, the cost of education is high which include books, fees, lodging, uniforms, transportation and so no which may be daunting on poor families. The opportunity cost and the private returns that families reap from girls are enormous to hold back girls from schooling. (Child care provision, petty trading, farm work, cooking and so on). Though the World Bank (1995) has stressed investment in female education as an important development strategy for developing countries many countries are reluctant to implement this fully in the economic plan. The high social benefits associated with female education include; educated females marry later, have few children, better nutrition, good knowledge on disease control and so no. Zuga (1999) revealed that parents who have reached a certain level of education want their children to achieve at least that level. Mothers especially who have succeeded in completing a certain level of education

have experienced its value and know that it is within the reach of girls to complete that level and above.

Emphasizing on the importance of science, technical and vocational for girls, UNIGEF says that girl's scientific, technical and vocational education is crucial to raising the scientific and technological literacy of the next generation of African children, who may not all received formal education. It opines that in educating a boy one educates one person, whereas, in educating a girl, one educates a whole family. The recognition of women's role in TVET should therefore be given due consideration in an era which is largely dominated by science and technology. Many studies have pointed to the fact that the education given to women and girls is designed only to domesticate them should be avoided. According to Thabo Mbeki, 'the African Renaissance' need to be applied in full force in all countries of the continent in providing an enabling environment that will help bring out the continent from science and technological backwardness. Africa Renaissance is concern with improving the quality of general education and TVE in particular and to increase their access to women and girls.

Gender role on household division of labour is another issue where most parents have severely handicapped their daughter's participation in education in general. Tortoll (1999) noted that women still carried that the burden of domestic responsibility. There is greater need for girls rather than boys labour at home. CAMNAFOR (2009) reveals that girls are over burden with domestic labour starting as early as 4 AM and closing as late as 10 PM. Many other previous research as well as information gathered from students, parents and teachers, indicate that generally, girls spent considerably more time performing household chores them boys. This has an effect on girl's education in a number of ways including :

- The number of hours spent performing household chores and other tasks means that girls have little time and energy left to devote to their academic work.
- Girls also have an added disadvantage in that while the types of chores that boys do like heading, allow them time and opportunity to study the chores that girls do are difficult to combine with study (preparing food, washing clothes etc)
- Girls are often late in the morning as result of having to complete their household chores especially with the present crisis in utility supplies.

Apart from punishment incurred for lateness, there is also the added disadvantage of missing lessons which are mostly likely science and mathematics which are often taught to the morning, because it is at this time that students are thought to have the most energy and are thought to be able to concentrate best.

Missing lessons on these subjects make it difficult for girls to comprehend past topics or catch up in with others. This induced frustration and the likely tendency is to abandon or reject these subjects resulting to low participation.

UNESCO (2011) notes that because girls are responsible for such adverse number of household tasks, some parents prefers to keep their daughters at home. This is especially true in areas where girls are engage in income earning activities to supplement family income. Many parents therefore find that the opportunity cost of educating a girl is too high especially when the income from their activities contributes towards raising the family's standard of living. Zuga (1999) also reveals that a as girl child becomes older, she is expected to take on more responsibilities in the running of the home. This takes more of her time at home during a period when she is probably at an educational level when learning is more involving and demands greater interest and focus. This is likely to affect her performance leading to loss of morale, poor performance often leads to repetition and the resulting frustration could lead to school dropout.

Girls own perception of who society defines them and their economic expectation plays greatly on their accepting the challenge of enroll in TVE. They believe it lead to could alienation from other girls and earn them the contempt of the boys, who were often reported to discourage girls who are participating positively and performing well in these subjects (Zugan, 1999). In Cameroon for example, it is reported that girls offering sciences in general and performing well in them are considered witches and often called names such as woman-man, Brian box, book shop and so on. Parents were reported to discourage their son form marrying girls who are science inclined and TVET technical industrial trades.

2.5.2.4. Parental attitude in girls school work

Parental involvement in the child school work is a strong factor in attaining educational achievements. George (1995) identify four areas of parental involvement which are; Provision of school needs, discussion about home work, discussion about school and attending school meetings and other events. The financial, physical and moral participation of parents in their children school activities is not only a mark of concern but an aspect of motivation and assurance that they are loved. Parental involvement is determine by factors such as; level of education, family income, rural or urban settlement, parent occupation, number of children and the educational level of the child. Studies on parent attendance during PTA meetings of some mission secondary schools in the Bamenda central sub-divisions revealed that parents of children

in the junior forms registered far high attendance than those in the senior forms. This justifies the assertion of George (1995) that parental involvement declines significantly with grades.

According to Brookand Cammish (1997), reveals that the lack of a culture of parental monitoring of children's school work is a serious handicap on their performance in general and a reason for girl's poor participation in science, mathematics, technology and technical trades in particular. Girls were reported to rarely receive positive encouragement to try the technical industrial fields for which boys are supposed to have a natural aptitude, and are nurture to internalize the expectation and the acceptance of the myth that boys are better in these areas than girls. Sama (1986) put forward some factors that account for the lack of parental interest, support and involvement especially in their daughters' academic work. This lack of involvement was attributed to a number of factors including :

- Most parents have the belief that academic work is the preserve of the school and in particular the job of the teacher and therefore are reluctant or unwilling to become involved.
- Lack of time. Many parents have little time to spare from their daily schedules to devote to helping or follow up on their children's school work. Owing to the limited economic means for most households both parents are engage in activities that consume both time and human energy example '*buyam sellam'*
- Many parents have little or no education themselves and therefore do not have the knowledge or skills required to help or monitor their children's academic work. Because of low economic level of most households many parents are more concern with the immediate benefit that female children assistance may bring such as cash from sales, rather than support them in lengthy education programmes.
- Many parents expect less of the girl child and any little attainment is considered sufficient. Because less is expected of them, they also in turn expect less of themselves and demonstrate less confident of their intellectual and skill potentials. Boys on the other hand are pushed to succeed because more is expected of them.

Given these adverse conditions therefore girls who may fail to gain promotion to the next class are more likely to be withdrawn from school than the boy. The philosophy of 'try again' is rarely applied with low income and less educated parents. Silverman's et al (1993), opines that the negative belief held about female academic abilities is activated greatly by the school through the curriculum, textbooks, teacher bias and other school process, which dominantly favour males students against females. For examples questions are directed mostly to boys

during teaching especially in mathematics lessons. If boy response is wrong is it a problem, if girls do same, it is considered but normal. This attitude and more alienate girls during the learning process as they consider their contribution to be less significant. This results to low poor performance.Rita Torto (2009) notes that, many teachers, parents and even students not only believed that girls were academically less capable than boys, they also believed that girls were less interested in academic issues and more easily distracted and were more interested in romance and physical appearance. Since TVET is considered un-lady like, many girls were reported reluctant to try and excel at these subjects. They assist their families to choose traditional courses for them by their display of lack of interest.

Zuga (1996) reveals that girls were also considered a risk to educate because they were likely to get pregnant or married and drop out of school and money spent on their education would therefore be wasted. For these reasons, most parents express that given the chance they would rather prefer to educate boys. The issue of marriage is a determining factor for women unwillingness to offer technical industrial trades being male dominated. Many parents are of the opinion that lengthy educational programmes would delay girl's chances of having a husband and consequently having children. Another perspective of parental attitude in connection to girl's academic pursuits is the commonly held view that technical industrial courses are considered difficult and is a preserve for male. This notion attract less attention of girl's who considered less capable received less encouragement and are rarely challenged. Though this notion may be unfounded as revealed by (Zuga 1996) who says in the beginning, industrial arts education included significant numbers of women who were influenced by the philosophy of John Dewey, today their presence of women is near extinction.

Okocha (2009) reveals that in spite the growing awareness of the need for skill training in development efforts, there seem to be lack of information on the concept of linkage between education and working life. Many parents in his study reported that they have never met with guidance counselor nor were they directed to seek their consent by primary school authorities as pupils graduate to enter secondary level. This indicate that information dissemination both vertically and horizontally is still remote and one of the reasons of the myth about industrial trades as being too difficult. (Lioyds, 1993) says that women on their part believewhat it means to be a woman, a knowledge that has developed over the centuries and within the context of a male defined social norms,awoman are more ready to respect social definition of their abilities and potentials.

As children mature into adolescent family involvement in their learning remain an important factor. Ester & Conor (1993), Lee, (1994). opines that family involvement especially in girls education have led to achieving higher attention, better grade, points average and lower dropout rates. Also, it has been identified by many studies as the greatest predictor of child educational out come. It is associated significantly with children motivation to learning, attention, tasks persistence, receptive vocabulary stalks and low conduct problems. (National Research Council, 2001, US Department of education, 2000). Turnbell (1983) agrees to this assertion and says that the family shapes the social integration of the child more than a formal school. Parents therefore should be encouraged to adapt to positive functional attitudes not the conservative tendencies of a strict cultural prescription.

2.5.3. Sociocultural Practices

Sociocultural practices which make up culture have a great influence on human behaviour. Haralambos (1987) defines culture as a set of shared values which affect how people think, act, and more importantly provide criteria by which people judge others. Cultural meanings may render some behaviour as normal and rights and others as strange or wrong. Usually because cultural imprints starts at a very early age most people are sometimes unaware of the biases inherent in some of them. Sander (1999) identify three important roles of culture which are; linking individuals to one another, providing the basis for a common identity and creating a context for interaction and negotiation among members. Given these criteria therefore, culture is a by-product of social interaction that may be positive or negative on human development and its environment.Cultural implication given its role in society has some significant on education.

2.5.3.1. Early Marriage

Women and children are the most vulnerable groups in every society where cultural injustices have seriously limited their participation in the development process Ngassa, (2009). Traditionally, girls are victimized by culture, religion and superstitions beliefs that cause marriage to be seen as a higher priority against education. The social rational for the low value attached to girls education is that they will get married and their education will not benefit her family (Asomaning & al, 1994). Often girls are sent to marriage before they complete primary school or even before their first menstruation to be married to men far older than them. Thissometimes may occur against their will. Early marriage fuel early pregnancy and those who become pregnant are excluded from school. According to Stepping Stone an International NGO

report on violence against children (2006) remarked that early marriage do not only limit girls access to education but equally make unproductive available educational resources.

2.5.3.2. Child labour and House Chaos

(Asomaning and others 1994) affirms that girls in particular are needed for child care demands. With the growth of urbanisation the demand for domestic labour has increased leading to some unpleasant practices such as child trafficking. Child trafficking is a practise where young girls or boys are sent to stay with wealthier relations or people not related to them in the city to do house work in exchange for some cash income or promised formal or informal education. Girls are the most vulnerable in this practice as such displacement often occurs in their primary school or immediately after they complete primary school (Fanta, 1991, Niane and others, 1993, Lange, 1994). Child trafficking is modern day slavery. It results to domestic slavery in degrading treatment and conditions including gruelling 10-14 hours of house work per day, denial of basic education and even contact with families. According to Wamey (2011), it is the second largest and fast growing criminal industry in the world and the third largest criminal enterprise in the world. Trafficking is both for sex and labour related activities such as agriculture, message parlours, nail salon, hair braiding, and domestic servitude including nannies and maids.

According to the Embassy of the United State Yaoundé-Cameroon 2012 -Trafficking in persons Report on Cameroon reveals that Cameroon is a source, transit, and destination country for children subjected to force labour and force sex. Children from the ten regions are involved in involuntary work in domestic service, street vending, mining and agriculture. PLAN International (2011) report on child trafficking in Cameroon identified northwest region as having the highest rates. They reveals that about 2.4 million children are in involuntarily work in domestic servitude, street vending and child prostitution. Approximately 83 percent of girls are sold before the 15 years of age and are forced to work with very little or no compensation. Rural parents who hand over their daughters to benevolent and middlemen who promise education and a better life in the city ends up neither having the child nor receiving the payment made to the child. It is usually the trafficking contractor who receives the payment. Child trafficking reduces female enrolment in secondary school as most girls are trafficked after primary education.

2.5.3.3. Male preference and sexual abuse

The preference of the male child is a custom which according to Ndzi (1998) leads to the neglect of the girl child. The preference for sons is because of the belief that they will uphold the family name. Research reveals that divorcemay occur because a wife cannot bear a son.

Because of this image of preference inculcated in the boy, boys are expected to be aggressive which refers to intelligence, dominance, initiative and other power tendencies. Similarly, Sama (1986) is of the opinion that parents often have negative attitudes towards their daughters education because girls get married and the benefits of their education is enjoyed by their new family at the expense of the girl's family. Rather boys should be educated because they will take care of the parents in old age. In response to this, therefore the highest level of education for most girls is primary education reason why they are few females at the tertiary level.

Practices of sexual abuse have a negative influence on female education. These practices may assumed many forms including sexual slavery, virginity testing, genital mutilation and rape (UNESCO, 2007). In sexual slavery, young girls are taken as sex slaves by wealthier individuals who operate a sex shop to earn financial benefits. Virginity testing is a harmful practice. It involves checking if the hymen is intact and can be carried out on an individual bases or in a group. Virginity testing is usually undertaking as part of the condition for marriage and bride price. Some cultures insist on virgin bride and for fear that girls do not get corrupt by school and peers some parents send girls to marriage as early as 12 years of age (Fiona, 1997). There is usually some incentive for parents whose daughters marry as virgins from the groom's family. Besides virgin marriage there is also the virgin myth that having sex with a virgin will treat illness or cause breakthrough for material prosperity (CAMNAFOR, 2007). Also venerable to this myth are girls with albinism, who may become a victim of rape because of similar misguided belief that having sex with them can cure HIV/AIDS and also that they cannot conceive. This myth has led to rape of some young girls and even female infants. As house helpers girls are vulnerable to sexual harassment even from their master.These traumatic experiences may lead to fear of social gathering and since the school is a social group many young girls may develop school phobia and remain without formal education.

There is a wide spread belief in witchcraft throughout Sub- Sahara Africa. In Cameroon, according to a report by Plan International, (2010) on its educational plan, reveals that an increased number of children are accused of witchcraft. Girls are a principal victim.The notion of witch craft spread out to include occupations. Thus girls who offer options which are contrary to their gender majority are usually labeled with such appellation. A child accused of witchcraft is subject to both physical and psychological violence by family, community members and religious leaders. These children are discriminated against, are maltreated, abused, ostracised and abandoned (Mary 1998). They are taken to churches for 'deliverance' and can become victims of extreme violence such as beatings, being burnt, poisoned or even buried alive and killed. Even if child is not physically harmed, the allegations that they are a witch or possessed of evil spirit

causes a lasting trauma. This will affect attention, concentration, and participation in class work and in extreme cases some abandoned school, others are isolated, mocked, disgraced and are derogatorily call names.

Although witchcraft is outright condemn by the UN Statutory on Human Right and the Cameroon criminal law, one difficulty with challenging this form of violence is that, mainstream religions such as; Christianity and Islam support the believe of spiritual possession and exorcism of spirits. So there is reluctance to ban 'witchcraft branding' even though this is proven to cause lifelong scars (Stepping Stones Nigeria (2010) report on the Accusation of witchcraft Against Children in Akwa Ibom State, Nigeria). The UN Secretary General however insists no violence is justifiable and all violence is preventable. Neither, tradition, culture, religion nor superstition can justify harmful practices that violate children's rights, including right to life, maximum development and protection from all forms of violence (UNICEF, 2012).

2.5.3.4. Lack of Encouragement

Parental and community involvement are essential to the success of any measured aimed at improving education. As key players they determine greatly the educational outcome of especially girls. Base on traditional cultural beliefs regarding gender roles and characteristics, their perception of girls academics abilities influence the level of support they provide to girls for participation in TVE. From child hood through adolescence, to adulthood, the traditional North West child is formed to hold tenaciously to the belief of male superiority, to reverence them as powerful and lord. Ancestral worship is used to internalize this attitude. Ancestors are members of the community although not in the physical but rather in a mystical sense. Ancestors are held up as models to be copied, strictly adhere to, preserve and transmit the traditions and norms of the community (Mbiti, 1998). For ancestral believe to be effective there exist important sacred traditional institutions and structures with significant religious dimensions. They include sacred kingship institution, public shrines, sacred grooves, divinations and masquerades (Phanice Ingesia, 2010). Each of these implies important religious belief, supernatural power and authority and serves as a channel of inculcating and promoting the ideals of harmonious living in the society. One of such ideals is the strict respect of ancestral division of labour by sex. It is therefore culturally acceptable that girls should respect their culturally oriented trades in TVET.

Culturally, there exist a number of cultural rites that are executed to effect passage from one age group to another or social strata. Initiation rites into adulthood in particular have assumed many forms and differ from culture to culture. Female mutilation is practiced in some regions in Cameroon especially in the south west. As a measure to check female sexuality in matters of

sexual curiosity, the clitoris is cut off in a violent and painful process that something led to heavy lost of blood and even death. The objective is to reduce sexual arousement in female and thus preserve their virginity until marriage. This traumatic rites have long term consequences on female education who usually stop school during this period, or become too indiscipline as they now view themselves as equal especially with other female teachers.

Lack of supervision, ignorance and uncontrolled desire for pleasures, and worldly destructions are some causes for early pregnancy (Ngassa, 2011) that lead to low rate of female in TVE. Some cultural practices in the present context are not necessary, but because of the benefits a privileged group may be reaping from it, it is sometimes hard to break except with education and also a suitable replacement to such incentives.The economic factor, personal fitness and custom and traditional practices are inherent in the socio-cultural factors that deprived girls to enroll into non-traditional options in technical education.

2.6. Other obstacles

2.6.1. Economic factor

Sending girls to school entails direct and opportunity costs which are prohibitive particularly on poor and rural families. Direct cost of schooling even in the context of free primary education is high because other provisions needed for schooling far exceeds the payment of fees. For example in Cameroon schooling direct cost will include; Fees for registration and admission, examination, boarding, parent and teachers association (PTA) fees, school building fund, uniforms, books, extra tutorials, transportation and feeding and others. These can add up to be two or three times the cost of tuition. Technical education is more expensive both to parents and the state because learning is base on doing. With the economic crisis hitting hard on the state, the government of Cameroon has reducedsubsidies to school thus the cost sharing policyis heavy on parents and is likely to work against the girls. Where parents find it too difficult to meet up with cost the likely option is to withdraw girls from schooling. Also, the fact that most technical colleges are not found in the districts coupled with the high cost, poor parents prefer general education which is both cheap and easily accessible.

The opportunity cost of sending girls to school is another dimension of economic factor which have hinder enrollment of girls in technical education as a whole and industrial options in particular. Girls labour is indispensible in the survival of poor families Brock and Cammish (1991). With growing urbanization and female professionalization the demand for domestic labour is on the increased, poor parents are sending their daughters for into the domestic labour market for exchange for regular cash flow. Most often the money earned by the girls are used for

everything expect her development. Bride price, adultery fines, polygamy, and excessive domestic burden on women and girls deprive them of education.

2.6.2. Personal Factor

Accessing personal fitness to occupation Ginzer (1972) agrees that in career decision process personal factor is a major concern because individuals usually make personal assessment of themselves to the occupation they intend to enter into. Perception is determined by factors such as, life experience, culture, education and the people significant to us. These will constitute internal cues on which to base decision(s).This supports Banks (2007) self-perception theory that purports that decision are made base upon the individual'sself perception and the expectations at the time of the decision in respond to information, situations and circumstances.In connection to occupational choice, Bem (1972) identified two factors that explain self perception theory:(a) individuals come to their own attitudes, emotions, and other internal states partially by inferring them from observations of their own overt behaviour and/or the circumstances in which this behaviour occurs; (b) to the extent internal cues are weak, ambiguous or uninterruptible, the individual is functionally in the same position as an outside observer who must rely upon those internal cues to infer the individual inner state. Given these circumstances therefore, individuals evaluate themselves just as they evaluate others.Thus variables such as occupation may likely affect perception of others and even perception of self.

2.6.3. The Curriculum

The content of the curriculum and its application are aspects that also have contributed the unpopularity of technical education as a whole. In general, the quality of training is low, with undue emphasis on theory and certification rather than on skill acquisition and proficiencytesting. The situation is on the decline with the reduction of state subvention to technical schools. This has theorized the teaching/learning process to a greater degree. Practical lessons are most probably done only during public examinations, confessed a final year student in one of the selected schools of the study. Inadequate instructor training, obsolete training equipment, and lack of instructional materials are some of the factors that combine to reduce the effectiveness of training in meeting the required knowledge and skills objectives. The absent of industrial training further alienate the student from both effective practicing and observation. According to Che (2010)

> *"All technical know-how cannot be obtained in an educational institution only. A systematic teaching in the class rooms, laboratories and workshops followed by comprehensive practical training in*

industry in the real sense ought to be an essential part of the curriculum and examination".

At the present, the practical training being imparted to the students is treated as if it just an academic formality, with the result that in most cases, a technician coming out of school is without substantial means to meet the demands in the socio-professional milieu.To come out off this inertia, technical education in Cameroon needs an overhauling of the system to meet international goal and even local realities. High quality skill training requires appropriate workshop, equipment, adequate supply of training material and practice by learners.

2.6.4. Men's Perception of Women in Male Dominated Disciplines

Men are needed to recognize the place of women in their dominated options and their seeming unwillingness to accept them also has an impact. Most men have built resistant to accept women as partner in the development of their communities Huyer (2003). Many reasons may account for this including ignorance of men about the knowledge of women emancipation, which many still considered is a western notion to make women stubborn, the patrichial position of the boy child as keeper of family line and the harmful traditional practices on women such as payment of bride price which reduces women to economic good (Ngassa, 1999). Gender equality and equity are concepts which most men are using to decry female subbogation. Many men are conservative and will not accept their wife to perform jobs supposedly meant for men. Huyer (2003) opines that consistent prevailing gender stereotype about female abilities make women to be perceived as less technically competent than their male counterparts. This has created an environment where technical industrial learning and work place is still dominated by men and women are viewed as 'not fitting' into industrial education.

Equal access to rights and opportunities in education as a whole and technical educational education in particularly will provide an enabling environment for women to participate to build strong economies, achieve international agreed goals, achieve sustainability and improve the quality of life for women, men, family and community. To achieve these it will be necessary that men who are partners to women in development should cultivate an inclusive mentality in all sphere of national life. It will be a real waste of human resources if the potentials in women are neglected. To achieve planet 50-50 by 2030, representation of women in areas of their low representations must be taken serious.

2.7. Section Two: Theoretical Review

2.7.1. The Gender Base Schema Theory

Dr Sandra Lipsitz Bem is a psychologist and the author of the gender schema theory developed in 1981. The theory is centred on how individuals come to gender as an organising category in all aspects of their lives. That is the theory attempts to explain how information about gender role attitude might impact perception and the expectations of men and women in society. The theory combines aspects of social learning theory and cognitive development theory of sex acquisition.

Bem in 1981, created the Bem Sex Role Inventory to measure how well individuals can fit into their traditional gender role by characterising their personality as masculine, feminine, androgynous or undifferentiated. She believed that, through gender schematic processing a person spontaneously sort attributes and behaviour into masculine and feminine categories. Bem (1981) defines a schema as 'a cognitive structure of network of association that organises and guides an individual's perception'. A schema functions, as an anticipatory structure, a readiness to search and to assimilate incoming information in schema–related terms. Other functions of the schema identified by Bem (1981) include; the readiness to process information in terms of a particular schema, to organize information in schema-related categories, to make highly differentiated categories and when given a choice will choose to make discrimination along those same dimensions. Gender schemas thus involve a generalised readiness to process information on the basis of sex linked association.

Every society allocates roles on the basis of sex. Boys and girls are expected to acquire sex specific skills and self-concepts that are masculine or feminine as prescribed by their particular cultures. The ability to perform these roles is largely constructed from information children gather from parents and other elderly members in the community, the experiences open to them, the objects of their play time and so on. For example, girls receive baby toys, kitchen sets etc for a birthday gift while boys may receive toy trucks, guns, cars etc as birthday gifts. Also in school, girls cleaning and boys the clearing; at home the boy splits wood while the girl washes plates. These examples in functions send messages of gender role attributes. In addition to such content specific information, children also learn to evoke a network of sex related associations in order to evaluate and process new information. Thus, Bem (1981) holds the premise that gender is a mentally organised pattern of behaviour that helps children sort out perceived information.

The gender schema contains information about many aspects of men and women in a given society. Often this involves a diverse and sprawling network of association encompassing features directly related to male and female such as anatomy, reproduction, function, division of labour and so on. And also personality attributes such as how to smile, sit, dance, and eat. Generally, schema includes behaviour characteristics of male and female. Bem 1981 posited that gender role schema comprised two types of human behaviour characteristics, feminine and masculine. Traditional feminine traits include affectionate, cheerful, compassionate and eager to sooth hurt feelings, gentle, sensitive to the needs of others, soft spoken, warm and yielding. On the other hand, traditional masculine traits include: acting as a leader (instructional), aggressive, ambitious, athletic, competitive, dominant, forceful and makes decisions easily. In general masculine traits are associated with instrumental orientation, a cognitive focus on getting the job done. And feminine traits are of an expressive orientation, an effective concern of the welfare of others.

From the perspectives of this theory and given that schema helps individual process information; The information that children received during early socialisation at home and even later in schools are internalised and become base for appropriate feminine or masculine perception. Their assigned roles and division of labour, further conceal these ideas. These ideas impact on their personality and self-concept and consequently their interest which they express in the choice of courses and options in their educational careers. Bem (1981) noted that women are traditionally expected to have a homogenous goal of marriage, have children, care for family and so on. This primary interest leads parents and girls to opt for careers that may establish a balance between family life and work. Women domestic responsibilities have also been proven by several researches to be a cause for women persistence on traditional careers and their unwillingness to give a try to other areas. The inflexibility of society to relax on social norms and values; practices and believes concerning women roles are principally responsible for the prevalence of women in traditional career orientations and their relegation in matters of leadership.

2.7.2. Human Capital Theory

The concept of human capital was developed in the mid-20th Century, because of the change in the value of education. It is Becker's classical study of how investment in an individual's education, training is similar to business investment in equipment. It is founded on the notion that education increases workers productivity and consequently greater economic output. Education creates and develops skills which facilitate higher levels of productivity amongst those who possess them in comparison with those who do not. It asserts that individuals

acquire knowledge, skills and the right attitude to increase their value in the labour market. According to Becker (2005), Human Capital is the stock of competences, knowledge, skills and personal attributes embodied in an individual that provide the ability to perform work (task). In relation to a nation, Human Capital can be regarded as the sum total of the capacities of all the individuals in a community relevant for economic activities. This will take into consideration the level of intelligence, education, creativity, innovativeness, health and wellbeing, capacity for empathy and caring that individuals in the society possess and are willing to devote it for the welfare of themselves and others OECD (1988).

Human Knowledge is wealth and should be nurture, developed and productive.Human capital theory therefore, focuses on the economic behaviour of individuals, especially on the way their accumulation of knowledge and skills will enable them to increase their productivity and wealth and consequently increase the productivity and wealth of the society in which they live in. There is strong and empirically, verifiable, positive relationship between the wages and salaries people receive at work and the level of education attained. Following the competitiveness of the labour market, people with higher level of education will end higher wages. Research has asserted that high skill jobs are paid high wages. As a result this explains why employers use educational characteristics as a proxy for suitability and potential productivity. On the other hand, those with less or no education tend to have earning profiles which remain flat throughout life, an indication that not only do education increase productivity but also enhances the ability to learn-by-doing, causing productivity and thus earnings.

Education and health are the key factors to improve human capital and ultimately increase the economic output of a nation (Becker, 1993). Education is costly and entails huge sacrifices humanly, financially and materially but its associated benefits make it a worthwhile venture. The benefits associated with increase welfare is highly linked with female education as their education will impact family life in terms of better nutrition, better disease follow up, support education of children, space delivery and so no (UNESCO,1989). Females are expected to use knowledge, skills and the right kind of attitude acquired in other to make relevant the other resources; land capital and entrepreneurship. As a factor of production, human resource wastage is the worst economic blunder that no nation should encourage. Sadly this is seemingly true in our context where knowledge, skills and attitudes acquired through education are not employed in production due to increased rate of unemployment (National Employment Fund, 2014). Experience, training and education are the three principal ways to acquire knowledge, skills and attitudes to increase individual's performance in either a paid job or a self-employed job and these must be relevant to the socio-economic realities of the community. Unfortunately

the type of education that many of our college graduates have is those that make them more job seekers than job makers and because the current socio economic demand is production intensive not administration many are unemployed.

Human behavior is based on the economic self-interest of the individual operating within the freely competitive market (Schultz, 1976). The school system is pivotal in inculcating into individuals the potentials required to be economic relevant. Through its curriculum, pedagogic practices (teaching/learning), textbooks, and educational programmes, the school system develops the workforce for present and future generations of the nation. The sellable curriculum in this technological driven era are those that relate to science, technology, engineering and mathematics (STEM) (UNESCO, 1999; Che, 2010). This therefore denotes that, the human capital of a nation is a function of its educational system. Compulsory education is not sufficient, new education system that will reinforce and maintained the economic status in the global knowledge driven should be encouraged. Invest in people today for higher returns tomorrow (Berker, 1972).

Women constitute a vibrant population in Cameroon owing to their majority population of 52.3 percent (Institute of National Statistics, 2010) and play very important roles in reproduction and production. As mothers, they are the first teachers of the children and it is believed that educational investment on women will produce tremendous impact in assuring healthy families and better educated children in morals and otherwise. Every nation that expects to develop cannot afford to leave behind women in its development prospects. Labour is the second important resource in the production of goods and services the others being land, capital and entrepreneurship. Labour is a dynamic and flexible resource that nations have used to attain development in this technologically driven age for example Singapore. Through an inclusive and technology intensive education system Singapore developed a skilled workforce that transformed its economy into modern state in record time. The human capital theory therefore seeks to valorise all individuals as potential economic contributors. Knowledge and skills acquisition in hand-on work training/ learning can permit both female and male to try options not linked to their gender. This will provide employable skills to young people and ease their access to the labour market.

Proponents of Human Capital theory opine that:

- Human beings are viewed as capital and therefore entail returns.
- Mincer (1994) believes that a worker's income increases as his/her level of education increases.
- Increased human capital results in high productivity and thus high wages.

There exists discrimination in the market place which reduces the real income of those discriminated against (Becker, 1992). It is only when can increase their participation in high skilled oriented career that female poverty can considerable reduced.

According to Mincer (1994) the educated worker has more advantages when compared to the less educated worker; higher wages, greater employment stability, greater forward mobility in income and status and greater opportunity for job appointments in leadership. Blair (1999) opines, that the more one learns the more he/she earns. By these assertions therefore the lot of women can be improved upon by their involvement in a broad spectrum education orientation that does not only limit them to their traditional gender roles but even engineering options which presently are male dominated. The low earnings of the poor have been greatly associated to their relatively low investment in education and labour market discrimination practices (Blair, 1999). Education therefore has the potential to alter the wellbeing of individuals by enhancing their earning power through work related behaviour.

Work is a human need and an activity that holds the key to human happiness and fulfillment (Marx, 1863). It is the means to fulfill basic needs, self image and self worth and is pivotal in the production of goods and services. Employment is related to social and political stability, a true reflection of good governance. Where unemployment is minimised the people support of the government is high, criminality and other vices are reduced. Considering therefore, the importance of work in society, it is important for the government to take seriously technical and vocational education renowned in skill training and work orientation. Human capital theory suggests that women can improve their situation by acquiring more and different kinds of knowledge and skill through education, training and experience. Poverty is the result of insufficient investment (Berker, 1972).

Human capital theory as the name implies is the extension of physical capital investment in human beings. This theory applies aptly in our study and context where educated youth unemployment is a pressing problem facing the government of Cameroon.Youth unemployment is a malice and challenge to the educational system and other policy issues. It calls for a quick intervention. The important role of technical and vocational education which train in skills either for a paid job or self employment is laudable in our present situation. The government of Cameroon should valorise TVE by eliminating road blocks on female access to TVE so that they can increase their earning power. In Cameroon, gender inclusive measures abound on ‘paper’ but the actually implementation is lacking. This retards female full contributions to the development of their communities. And considering their majority population, any nation that does not fight to

eliminate discrimination will be loosening out on its human resource potentials and cannot increase its wealth both quantitatively and qualitatively. Human capital theory therefore upholds that the true riches of any nation is not the vast natural resources that may abound but an educated, skilled and talented workforce that are able to transform their environment and create wealth.

2.7.3. Career Choice Theory

Eli Ginzberg (1972) is one of the proponents of career choice theory. She opines that career choice is a decision making process that builds up gradually from before puberty to early adulthood. She identifies three periods in life; before 11years, 11-14 years and 14 to young adult. She named these periods Fantasy, Tentative and Realistic respectively. Fantasy is purely play orientationwhich gradually becomes work oriented and reflect initial preferences. Tentative is transitionalprocess marked by gradual recognition of work requirements such as interest, abilities, work reward, values and time perspective. Realistic period is concern with the integration of capacities and interest and the further development of values, specification of occupational choice and crystallization of occupational patterns. Here career options are exploredthrough actual experience on the job. According to Ginzberg (1972) Career Choice Theoryis a decision making process that occurs from teenage until early twenties. (This period involves secondary school age-university). During this, period individuals generally begin to be aware of the importance of "getting a job".

This theory states that there are three main factors that affect a career choice. Firstly, personal factor such as evaluating self-suitability (interest) with the job or internal characteristics such as the personality which is assumed to suit a chosen job. Secondly, the factor of reality associated with the career which are the characteristics of the career that he or she assumed to be attractive that prompts the decision to choose a career and the third factor, the influence from significant others such as parents, neighbours, teachers, counselors and peer.

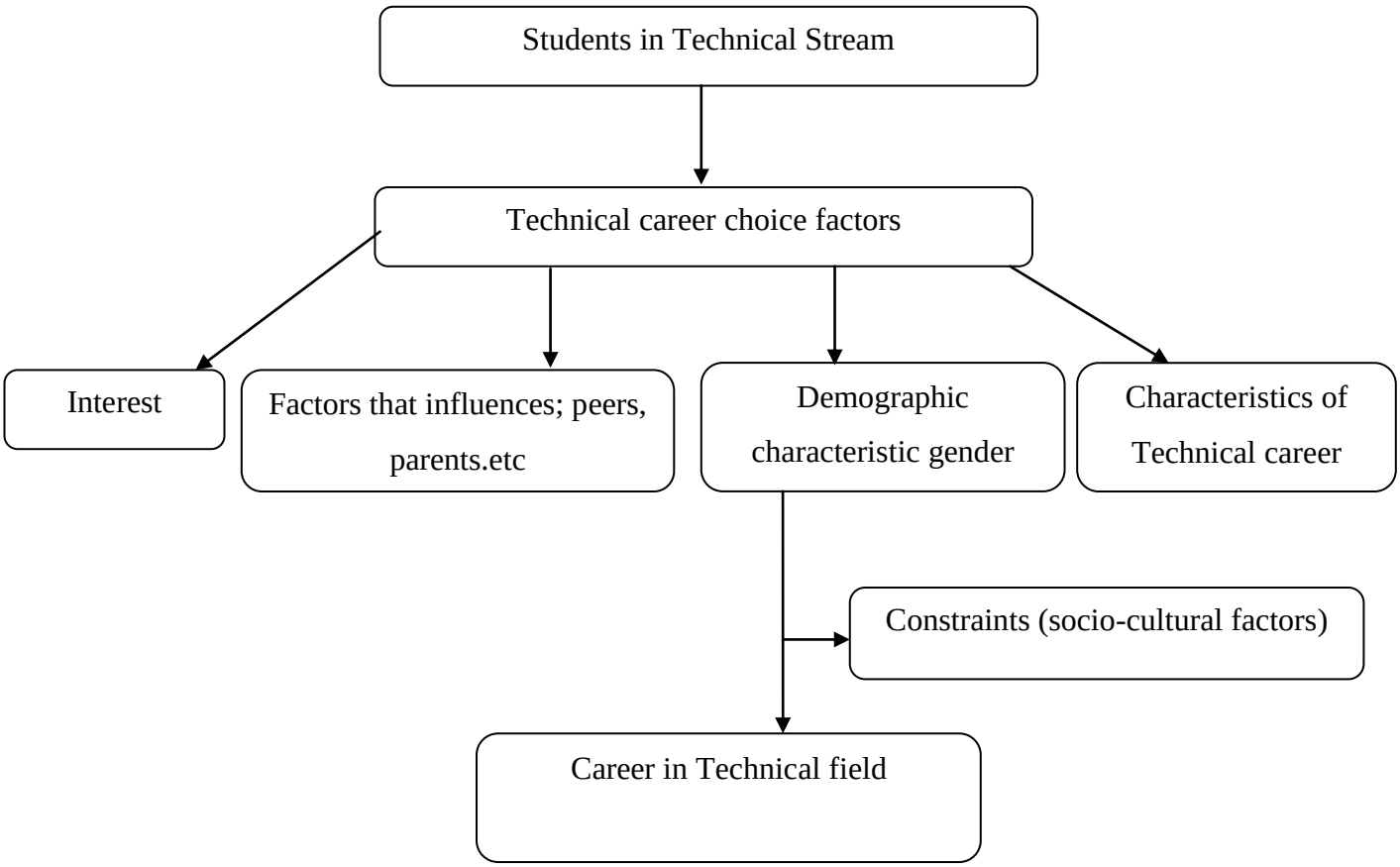
Evaluating self-suitability to technical industrial skills is the challenge that many women and girls are yet to come to terms. The traditional association of TVE to male suitability is scaring to females. Ginzberg 1972 postulates that though all education involves some formation leading to different career possibilities, social acceptance has a major role to play. Therefore the job people do is not only to satisfy their interest but should somehow keep the morale of society. In a dominant patriarchal society as ours men may be reluctant to encourage what may alter gender statuesque in occupation considering that women are tender and must be overtly controlled. This technologically driven era indicates that morphological requirements are not

primordial to perform skill operations and therefore strength is not a prerequisite rather intelligence and interest are more important.

The level of education is important in making a career choice. The level of education of parents in particular has a significance role to play in the process of career choice for their children. If the level of education of parent is high, there is a good chance that parents would choose educational courses and fields that will lead to high skill, high paid jobs. Highly educated parents have greater access to information and are privileged to interact with high quality personalities. Also, if the learner attains a high level in education, there is a good chance to acquire a better job. This therefore signals that, enrolment and a high rate of retention in education especially by females, in TVET, will place them on high positions where they would serve as role models and attract other females into the field. People entering into a career want to be ensured on the possibility for advancement. The more women are integrated and are in leadership positions the less the phobia in giving TVE. On the other hand, if the level of education of parents is low the chances of orienting learners into highly skilled, well paid jobs may be slim. In other words, Gimzberg is suggestive of the fact that career choice must be suited to interest, ability and values and not sex.

Parson (1976) advocates that individual should analyse the skills, interest, values and personal factor and then match these it to jobs which use them. The suitability of a career is a personal decision usually based on these factors. Though he cautioned this perspective work well in boom than regression, it is importantto cultivated interest from positive language and motivation. This theory then suggests that if society eliminates discriminating practices and stereotyped language, women and girls will seek to enrol in TVET, male dominated trades. Below is a conceptual frame work that is based on Gimzberg's (1972)

Figure 2.4: Career choice diagram



In this career choice, there are constraints for women since technical industrial trades are dominated by males. From the above diagram, the interplay of constraints notwithstanding female competencies that are likely to be accomplished to the career choice factors, limits females from participating in TVET. These constraints interfere with female interest and kill their zeal towards TVET, accepting the myth that TVET is for males.

CHAPTER THREE
RESEARCH METHODOLOGY

Introduction

Methodology is a strategy or procedure that is used for the collection of empirical data (Weiten, 1989). This chapter deals with the area of study, research designs, population of the study, research instruments, sampling techniques, technique of data analysis, variables and operationalization of variables and the recapitulative table.

3.1. Research Design

Amin (2005) defines research design as a plan for carrying out a research project. This involves a stated structure and process of conducting a research project, detailing the plan and method for systematically and scientifically obtaining the data to be analyzed. There exist different kinds of research design such as; case study, experimental study, survey study and so no. For our study, we used a mixed method approach combining both quantitative and qualitative methodologies, with the quantitative being the major method used. Several researchers have discussed the need for qualitative investigations of multicultural issues within psychology (Choudhuri, 2003; Morrow, Rakhsha, & Castaneda, 2001; Ponterotto, 2002) as they can provide an opportunity to better understand new phenomena or understudied populations without assuming that there is "one universal truth to be discovered" (Auerbach & Silverstein, 2003). Mixed method research may be particularly useful for gaining a more complex understanding of a particular topic while simultaneously testing theoretical models (Hanson, Creswell, Plano-Clark, Petska, & Creswell, 2005). (Greene, Caracelli, & Graham, 1989) suggested that mixed method studies can serve several purposes, including triangulation (seeking convergence of results), complementarity (examining overlapping or different facets of a phenomenon), initiation (discovering paradoxes and contradictions), development (using qualitative and quantitative methods sequentially), and expansion (adding breadth or scope to a project).

The present mixed method study was conceptualized from a pragmatic theoretical paradigm (Hanson et al., 2005; Tashakkori & Teddlie, 1998). We conceptualized and designed the study as a dominantly quantitative, concurrent design, which is indicated by the following procedural notations (Morse, 1991): QUANT + qual. That is, both quantitative and qualitative data were collected at the same time, and the primary methodology was quantitative, with a lesser emphasis on the qualitative portion (Tashakkori & Teddlie, 1998). The two approaches

were used to answer the research questions about the relationship between sociocultural factors and female access to technical and vocational education.

3.2. Area of the study

This study on socio-cultural factors and female access to technical and vocational education is based in Mezam Division of the North West Region of Cameroon. Mezam division is comprised of seven sub-divisions namely; Bamenda 1, 2, and 3, Bali, Bafut, Santa and Tubah. The division covers a surface area of 1,745 km^2 and has a population of 313,043 inhabitants. For purpose of this research, our focus is limited to the the Bamenda central sub-divisions 1, 2, and 3 with headquarters in Bamendakwen, Mankon, and Nkwen respectively. These three sub-divisions are the host of the political, social and economic seat of the division in particular and the region in general. Educational wise, Bamenda central sub divisions play host to several institutions of learning of all levels and types and is reputed for its academic excellence. Bamenda central sub-divisions have 7 government technical colleges and 5 lay private technical colleges (DRES, 2014). Out of these, three technical colleges were randomly selected.

Socio-culturally, the central sub-divisions are a mosaic of cultures reflected by its cosmopolitan nature. The population consists of people from the other divisions of the region, as well as other regions of the country with the west region being the majority. The dominant culture is the grass field culture reputed in respect for cultural norms and institutions, male fallacy, handicraft and hard work. The chief occupation is agriculture. The absence of industries has made self-reliance economic activity a dominant work culture. Skills' training in the informal sector caters for many youths who cannot go further in formal education.

3.3. Population of the study

According to Nworgu (1991) population refers to all members or elements of a well-defined group. It determines the limits within which research findings are applicable. Amin (2002) defines it as the sum total of the individuals having common characterized on which the researcher bases to make inferences and also test hypotheses. It includes the target population, accessible population and the sample of the study.

3.3.1. Target population

This refers to the mother population on which the results of the investigation are generalized. Our population of the study is made up of female students who are attending technical secondary schools in Mezam division of the North West Region. Mezam division is one of the seven divisions of the North West Region of Cameroon. Within the context of this

work, the target population refers to all female students attending technical schools in the Bamenda 1, 2 and 3 sub-divisions. These subdivisions of Mezam division play host to three government technical high schools. This means that the population of our study is homogeneous, targeting only the female students. The age range of our population of study is limited only to female students who are above 12 years since they are capable to read and write and participate actively in secondary education. In the case of our study, we shall talk about the target population and of the accessible population.

3.3.2. Accessible population

This population consists of female students of the three selected technical schools in Bamenda Central. This population comes from the various socio-economic backgrounds with varied performances. The common characteristic about them is that they belong to the same schools offering a given type of education in English as a lingua franca. We had to draw a sample from this group which is representative of the mother population because we had to economize time, money and energy.

The target population is a grouping of all the cases having common characteristics and from which the results will be generalized. For the purposes of this study, the target population consisted of three (3) secondary technical schools in the Mezam division. Therefore, the target population of this study will consist of 1574 girls. The schools were selected on the bases of accessibility and logistical factors such as distance. The selected schools were GTHS Bamenda, GTHS Nkwen, and GTHS Alabukum.

Also, in this research the target population comprised of only girl students in the selected Secondary Technical Schools in Mezam division. Secondary technical schools were selected for the study because it is at this level of education that gender disparity is mostly noted in the access to some technical field or domain. The transition rate from primary school to secondary technical schools level is lower for girls than it is for boys.

The accessible population is the one from which the researcher draws the sample of his study. In the case of this study, the accessible population will comprise the following schools: GTHS Bamenda, GTHS Nkwen, and GTHS Alabukum. The three schools were randomly selected for equal representation of girl students in the sample frame of girls of this study. The population was selected keeping in view the specific nature of the study in the sense that the researcher wanted a population where the students might have some orientations to be able to

understand the questions asked by the researcher and relatively wider understanding about the sociocultural factors influencing girls' access to technical education.

Table 3.1: Distribution of accessible and sampled population

School	Accessible population	Sampled population	Sample
GTHS Bamenda	1692	562	110
GTHS Nkwen	1832	732	144
GTHS Alabukum	980	280	54
TOTAL	4504	1574	308

For Amin (2005, p.237) a sample is a small proportion of a population selected from observation and analysis. The sample provides data which are analyzed and generalized to the mother population by principle of induction. The sample for this study was 308 girls who have enrolled in the three technical high schools.

3.4. Sampling technique and sample

According to Sidhu (2003), sampling is the process of selecting a representative unit from a population. Similarly, Cohen and Manion (1994) expand this definition by explaining that in sampling, the researcher endeavours to collect information from a smaller group or subset of the population in such a way that the knowledge gained is representative of the total population under study.

3.4.1. Sampling technique

Sampling technique refers to the method of selecting the sample of study. The three schools that make up the sample of this study were randomly selected. The researcher wrote the names of all the secondary technical schools in Mezan division each on a piece of paper. Owing to the fact that we are targeting only government technical schools, the researcher decided to ballot the schools.

In order to get a representative sample from the target population stratified random sampling was used to select girls from each secondary technical school. According to Cochian (1997) stratified sampling involves dividing the population into a number of non-overlapping sub population or strata and then selecting separately from each strata. In the study the target population was stratified into girl students' strata. Then the respondents were selected from each stratum by simple random sampling

After balloting, the following secondary schools were selected: GTHS Bamenda, GTHS Nkwen, and GTHS Alabukum. After clearance from school authorities, the researcher randomly selected students to whom questionnaire would be administered. The number of questionnaires to be administered in each school depended on the size of the said school.

3.4.2. Sample size

According to Amin, (2005, p.235),

> "*A sample is a proportion of elements selected from the population which helps the researcher to make a generalization about the whole population which is a representative fraction of the population. In addition, sample serves the principal purpose of making possible the study of problems which otherwise could not be undertaken due to cost, time, personal or scope*".

This means that a sample helps the researcher to use a small part of the mother population in the study after which the results are generalized. This is because using the entire population for a research is expensive and time consuming. The sample in our study includes all the female students of the selected secondary technical schools in Bamenda, from different background, culture, with different educational qualifications, and from different categories. The samples of this study came from three government technical high schools that were purposefully selected for the study. These schools were: GTHS Bamenda, GTHS Nkwen, and GTHS Alabukum. The researcher went to these schools. The information gotten from the records office of the regional delegation in Bamenda showed that the total number of female students in these schools for the academic year 2013-2014 was 1574. Considering the table of Krejcie and Morgan (1970), for determining the sample size for research activities, we assumed a sample size of 308 students to be representative of this population (Amin, 2005).

Table 3.2: Distribution of sampled population and sample included in the study

Categories of Schools	Sampled population	Sample
GTHS Bamenda	562	110
GTHS Nkwen	732	144
GTHS Alabukum	280	54
TOTAL	1574	308

Beside the survey, we conducted an interview with some students, to deepen our understanding of girls' access to technical secondary education. In order to collect qualitative

data from the student population, ten (10) female students were selected for interview; four (4) students from GTHS Bamenda and three (3) students each from GTHS Nkwen and Alabukum. The different trades in which they are enrolled into were taken into consideration.

3.5. Research instrument for data collection

In research, there are many instruments at the disposal of the researcher namely, opinions, questionnaire and interview. In the case of this research, two types of instruments were constructed to collect data about the variables under investigation. These instruments are the questionnaire and the interview guide. Amin (2005) defines a questionnaire as a form prepared and distributed to secure responses to certain questions. In other words, it is a device for soliciting answers to questions listed on a form which the respondent fills by himself.

One type of question items was used in the questionnaire, the closed ended questions. In the closed ended questions the respondents specifically responded using tick for their answers. The closed ended questions were easier to administer because each item was followed by alternative answers and were economical to use in terms of duration. The questionnaires were developed for only girl students with items aimed at getting appropriate information from the girl students

The questionnaire was prepared by the researcher in collaboration with classmates and the project supervisor. It was accompanied by a cover letter reassuring the respondents of the confidentiality of their answers. It has four parts. The first part had to identify demographic situation of the respondent (question items 1-7). The second part has items designed to collect data on social stereotypes (items 8-15). The third part had items based on parental attitudes (items 16-24). The fourth part contained items focused on socio-cultural practices (items 24-29). The last part had items based on girls' access to technical education (Items 30-37). Once the questionnaire was ready, it was assessed for validation.

The interview guide was to get information base on the research hypotheses and also to help meet specific objectives. It also helped to standardize interview, for the researcher could ask the same question to all girls. The interview guide was divided into three parts: the first part was characterized on personal information of the girls to be interviewed; the second, on reason for choosing technical and vocational education; the third on their opinions and those of the surroundings on their choice of technical and vocational education. The interview guide consisted of a list of eight pre-prepared structured questions. Being open ended questions so that the girls could freely express their views on the subject.

3.6. Validation of Research Instrument

3.6.1. Validity of research instrument

After the construction of the instrument; it was given to 3 experts to determine the validity of its content. The type of validity used here was content validity. According to Amin (2005, p.286) content validity focuses upon the extent to which the content of the theoretical concepts it is designed to measure. It is the researcher who establishes the validity of his/her instrument.

The formula of contents validity $=\frac{Total\ number\ of\ items\ declared}{Total\ number\ of\ items}$

From the results of the experts, the coefficient validity was calculated first after which the inter-judged coefficient of validity was calculated. This figure is then divided by the total number of items to obtain the content validity index. Concerning our instrument, the CVI stood at 0.75. This is an indicator that the questionnaire is valid, thus measuring what it purports to measure.

The interview guide was also built with the assistance of classmates and experts of related field to read and make their criticism. It was then corrected and given to the supervisor who accepted and gave the go ahead for it to be carried out.

3.6.2. Reliability of research instrument

Marshall and Hales (1971, p.213) see reliability as "the degree of consistency among test score". In other to establish the reliability of our instrument, we used the test-retest reliability type. This was to determine if we can rely on the instrument as far as obtaining the same result repeatedly. Following this procedure we first administered the instrument to a group of 10 girls. After two weeks, the same instrument was re-administered to the same group of individuals and the scores were correlated using the Pearson Product Moment Correlation Formula. The correlation index stood at 0.8 thus indicating that our questionnaire had a good test re-test stability index.

The questions on the interview guide were designed following the research objectives. That is, only questions relevant to our objectives were asked. The interview guide was designed and given to class mates and experts of related field to check their congruence with the objectives of the study.

3.7. Administration of research instruments

In order to obtain data to be analysed for this study, we came out with the questionnaire. It was personally administered and the responses were collected on the spot to increase the chances of getting valid information. The collection of data in the various schools took us two weeks.

First of all, we started the data collection at the GTHS Bamenda, then I went to the GTHS Nkwen and finally to the GTHS Alabukum. The process was the same in every school, with the permission of the administration; I gained access to the students and briefly explain the purpose of my study and gave out the questionnaire to be filled. We assured them that the work is strictly for academic purposes and that students were not to reveal their identity. We read each questions to permit students to easily complete the questionnaire. All 308 questionnaires issued out were returned thus registering 100 percent return rate.

Interview was conducted to expand on the investigation of the phenomenon. The researcher conducted the interview with selected girls' students offering technical industrial options from the three selected schools. The interview guide was to serve as guideline of questions as any question could come up in the course of discussions depending on the response the interviewee could give. The exercise took five days, since we arranged a rendezvous with two girls every day. They provided information on what motivated their choice of study and the challenges they encountered in a male dominated learning environment. Ten (10) girls were interviewed: 4 from GTHS Bamenda and 3 girls in the other two schools. The girls were excited to know that there is public interest in what they are doing. Most of them had role models they wanted to emulate. The media was the principal medium where they met with their role models. Few had role models in their community. The general zeal was the desire to be different and exemplary and to make concrete their abilities. Interestingly some of the girls offering technical industrial were holders of the General Certificate of Education Ordinary Level in the sciences and two in the Arts.

3.8. Data Analysis Technique

This work applies the correlation research design which describes the extent to which the variables are interrelated. With correlation studies, the data collected is used to verify if there is a relationship between two or more variables. According to Amin (2005, p.218), ''a correlational research attempt to determine whether, and to what degree, a relationship exists between two or more quantifiable variables". The relationship can now be used to make predictions. Both descriptive and inferential statistics are used to analyze the responses and verify the hypotheses. For qualitative data, responses will be coded, summarized and reported in relation to the specific research questions as provided by the different groups of respondents. Tables, percentages, charts, mean, standard deviations will be used to analyze the data. Also the Statistical Package for Social Sciences (SPSS) version 23.0 will be used for data analysis.

In this particular study, data analysis consisted of a combined statistical tool to analyze the data obtained from interview and the survey. To organise and give meaning to our data, we use various statistical tools: descriptive statistics, mean, standard deviation, the univariate analysis of variances (ANOVA), the Pearson Product Moment Correlation Coefficient and the Stepwise multiple regression analysis. In order to do this, researchers summarize the data, so that readers can construct a mental picture of the relationship between the data and the phenomena under study.

3.8.1. Representing the Data

Trochim and Donnelly (2007, p.83) stated that the use of graphic displays is "particularly valuable in making the logic of mixed-method design explicit". In this perspective, Tufte (2006) affirmed, "Most techniques for displaying evidence are inherently multimodal, bringing verbal, visual, and quantitative elements together" (Tufte, 2006, p. 83). The researcher also used tables to report results related to the research questions. According to Creswell and Plato Clark (2007, p.135), "These visual forms depict the trends and distributions of the data" and allow readers to better understand the quantitative results of the study in a summarized form.

3.8.2. Bivariate Descriptive Statistics

A frequent goal in data analysis is to efficiently describe and measure the strength of relationships between variables (Muijs, 2004). In this regard, bivariate descriptive statistics describes such relationships.

3.8.3. The Student t test and One way ANOVA

The research was conducted with a sample of girls who have personal characteristics and the univariate analysis of variances (one way-ANOVA) was used to determine the variability of girls' access to technical education by personal characteristics (school, class, age, parents' occupation and parents' level of education).

3.8.4. Correlation

The correlation coefficient was used to test our research hypotheses. The purpose was to measure the degree of association between the independent variables in our research hypotheses and professional development of student teachers, symbolize by the correlation coefficient.

The correlation coefficient is a simple descriptive statistic that measures the strength of the linear relationship between two variables (Amin, 2005). The value of the correlation coefficient r ranges from -1 for a perfect negative correlation, to +1 for a perfect positive correlation. The degree of association between two variables is described by the coefficient of correlation, which

indicates the strength of this association. In this study, in order to determine existing relationships between two variables, the researcher used the Pearson's r correlation coefficient because the purpose of this study is to predict the dependent variable from the independent variable (Muijs, 2004). In so doing, the Pearson Product Moment Correlation coefficient was used because the data in this study are parametric, that is, its interpretation does depend on the population fitting a parameterized distribution. The researcher also preferred to use parametric statistics because there is generalization of the results of this study to a larger population.

Interpreting the Pearson's Product Moment Correlation Coefficient: The usefulness of the correlation depends on its size and significance (Muijs, 2004). If r reliably differs from 0.00, the r-value is statistically significant, that is, does not result from a chance occurrence, implying that if the same variables were measured on another set of similar subjects, a similar r-value would results If r achieves significance, it is possible to conclude that the relationship between the two variables was not due to chance.

According to Muijs (2004), the size of any correlation generally evaluates as follows:

Correlation value	Interpretation
0.00 to 0.10	Weak
0.11 to 0.29	Low
0.30 to 0.59	Modest
0.60 to 0.79	Moderate
0.80 to 0.89	Strong
0.90 to 1.00	Very strong

On the other hand, it is important to state that correlation does not imply causation. In this regard, just because one variable relates to another variable does not mean that changes in one cause changes in the other. In other words, other variables may be acting on one or both of the related variables and affect them in the same direction. Cause-and-effect may be present, but correlation does not prove cause (Fraenkel and Wallen, 2000). In this study, the researcher was not interested in verifying if the occurrence of one variable caused or increased the occurrence of the other variable. The researcher was only interested in determining the strength of the correlation between the variables.

Coefficient of Determination (r^2): The relationship between two variables can be represented by the overlap of two circles representing each variable as in Figure xx. If the circles do not overlap,

no relationship exists. The area of overlap represents the amount of variance in the dependent (y-variable) than can be explained by the independent (x-variable). The area of overlap, called the percent common variance, calculates as r^2*100

3.8.5. Multiple regression analysis

In order to gain a full understanding of the nature of girls' access to technical education, it was necessary to proceed with a more refine statistical tool (Stepwise multiple regression analysis) to see which of our variables emerge as the best predictor for girls' access to technical education. Multiple regression deals with the use of many predictor variables to predict a criterion variable (Amin, 2005). Correlation and regression analysis are related in the sense that both deal with relationships among variables. Neither regression nor correlation analyses can be interpreted as establishing cause-and-effect relationships. They can indicate only how or to what extent variables are associated with each other. The correlation coefficient measures only the degree of linear association between two variables. Any conclusions about a cause-and-effect relationship must be based on the judgment of the analyst.

3.8.6. Content analysis

Much of human activity is not directly observable or measurable, nor is it always possible to get information from people who might know of such activity from firsthand experience (Fraenkel & Wallen, 2009). Content analysis is a technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications. It is just what its name implies: the analysis usually, but not necessarily, written contents of a communication. A people or group conscious and unconscious beliefs, attitudes, values, and ideas often are revealed in their communications. To conduct a content analysis, Fraenkel & Wallen (2009) give the following steps:

- Copy and read through the transcript while making brief notes in the margin when interesting or relevant information is found.
- Go through the notes made in the margins and list the different types of information found. Read through the list and categories each item in a way that offers a description of what it is about. Identify whether or not the categories can be linked any way and list them as major categories (or themes) and or minor categories (or themes). Compare and contrast the various major and minor categories.

When you have done the above with all of the transcripts, collect all of the categories or themes and examine each in detail and consider if it fits and its relevance

Once the entire transcript data is categorized into minor and major categories themes, review in order to ensure that the information is categorized as it should be; Review all of the categories and ascertain whether some categories can be merged or if some need to them be sub categorized Return to the original transcripts and ensure that all the information that needs to be categorized has been so.

The process of content analysis is lengthy and may require the researcher to go over and over the data to ensure they have done a thorough job of analysis. The analysis of our qualitative data was done by using content analysis to extract the meaning that the participants give to socio-cultural factors and role modeling in girls' access to technical education. The categories were constructed based on the same categories of our questionnaire and interview guide; and by given more attention to the occurrences of meaning in the discourses of the participants. The two set of data were analyzed in a combined way. Since the questionnaire is our principal method, the presentation of results was done as follow: Every analysis' category in the quantitative aspect was supported by data's discourses drawn from individual interview. By so doing, we clarified the quantitative results by the qualitative data.

3.9. Variables of the study

Weiten (1989) remarked that variables are any measurable conditions, events, characteristics, or behavior that are controlled or observed. Also it can be defined as characteristics that can take varied values with a population (Forti et al, 1998). In the research two main variables were identified; the dependant and independent variables.

The dependant variable is the variable of interest in a research situation. Here the dependant variable is female access to technical and vocation education with specifically industrial technical education were female representation is very low. Factors under access that were considered in the study include; economic factor, personal fitness and curriculum.

On the other hand, the independent variable is that manipulated by the researcher. In this study the socio-cultural factors responsible for this phenomenon include; social stereotypes, parental attitudes and sociocultural practices. Below is a diagrammatic presentation of the variables.

Table 3.2: Recapitulative table of variables

General Hypothesis	Specific Hypothesis	Independent Variables	Indicators	Dependent variable	Indicators	Modalities	Measuring instrument	Statistical tool
There exist significant relationship between socio-cultural factors and female access to technical industrial education	1)There exists significant relationship between social stereotypes and female access to technical industrial education	Social stereotypes	-Weaker sex -Family focused -occupational segregation	Access to technical industrial education	-Economic factors -Personal factors -curriculum	-Strongly agree -Agree -Neutral -Disagree -Strongly disagree	-Questionnaire -interview guide	Chi square
	2) There exists significant relationship between parental attitudes and female access to technical industrial education	Parental attitudes	-Socialisation process -Division of labour -Involvement in girls school work		-Economic factors -Personal factors -curriculum	-Strongly agree -Agree -Neutral -Disagree -Strongly disagree	-Questionnaire -interview guide	Chi square
	3) There exists significant relationship between sociocultural practices and female access to technical industrial education.	sociocultural practices	-Favourable -Encouraging -Rejection -Non registration of girls		-Economic factors -Personal factors -curriculum	-Strong agree -Agree -Neutral -Disagree -Strongly disagree	-Questionnaire -interview guide	Chi square

CHAPTER FOUR
ANALYSIS AND PRESENTATION OF DATA

Introduction

This chapter presents the results of data which were collected through the use of the questionnaire constructed in relation to the variables of study. The technique used in presenting the data is one where the various characteristics are presented and analyses made to show their impact on the study as a whole. It uses tables and charts to give a descriptive representation of results. The first part of this chapter starts with the analysis of background characteristics, and then proceeds with the analysis of different variables, while being attentive to the existence of possible relationship between variables.

4.1. Presentation and description of Data

In this section, we are going to present and analyze the data collected from the sampled population with respect to the personal characteristics of the respondents and the data obtained from the opinions of the girls following the order of items in the constructed questionnaire.

4.1.1. Distribution of respondents according to schools

Table 4.1 and figure 4.1 indicate that the highest number of respondents (144) in the sample population came from G.T.H.S Nkwen making a percentage of 46.753% and was followed by G.T.H.S Bamenda with 110 girls making up 35.714% of the sample population; and the least came from G.T.H.S Alabukum where 54 girls responded to the questionnaire making up the percentage of 17.532%.

Table 4.1: Distribution of girls according to schools

School	Frequency	Percentage	Cumulative Percentage
GTHS Bamenda	110	35,714	35,714
GTHS Nkwen	144	46,753	82,468
GTHS Alabukum	54	17,532	100,000
Total	308	100,000	

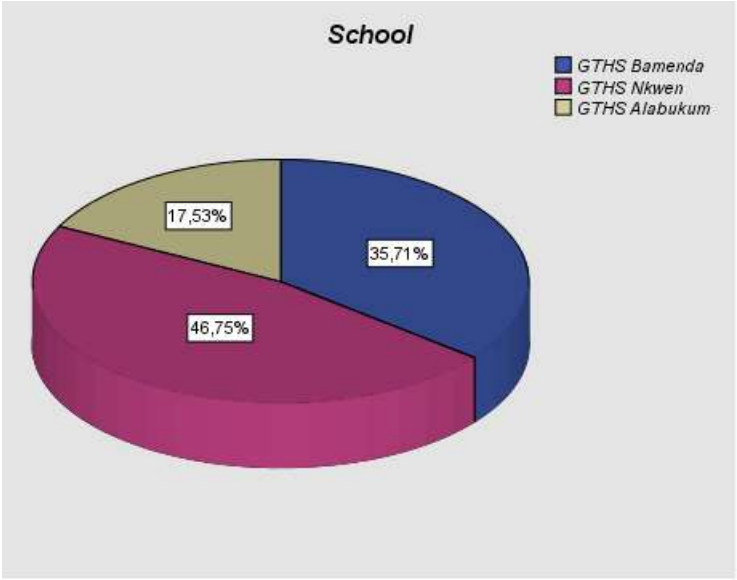


Figure 4.1: Distribution of girls according to schools

4.1.2. Distribution of respondent according to class

Looking at Table 4.2 and figure 4.2, they show that the highest number of respondents (127) in the sample population are students from Form five, making a percentage of 41.23% and was followed by students from Lower sixth (67), making 21.75%. The rest of students in our sample population distribute themselves among the other classes: Form Four (12.34%) and Upper sixth (17.86%); and the least came from From three where 21 girls responded to the questionnaire making up the percentage of 6.82%.

Table 4.2: Distribution of respondent according to class

Class	Frequency	Percentage	Cumulative Percentage
Form three	21	6,82	6,82
Form four	38	12,34	19,16
Form five	127	41,23	60,39
Lower sixth	67	21,75	82,14
Upper sixth	55	17,86	100,00
Total	308	100,00	

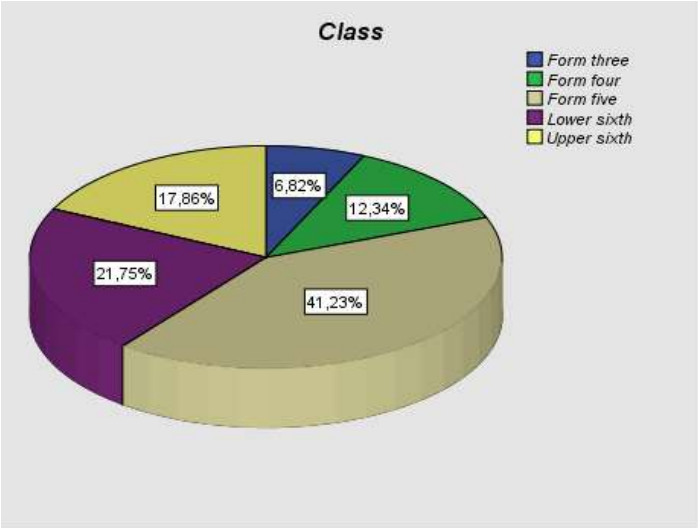


Figure 4.2: Distribution of respondent according to class

4.1.3. Distribution of respondent according to age

Age is considered a very significant factor in this study because the reasoning and the needs of individuals differs according to age. Distribution of the sampled population according to age would effectively provide a proper respond to the research question. Table 4.3 and figure 4.3 below present the age of our respondents in categories. They reveal that the majority of the girls were above 18 years old with the total number of 218 girls making up 70.78% of the total sampled population. This figure is followed by girls between 16-18 years old with a number of 72 girls, making a percentage of 23.38% of the total sampled population. Still from the table below, it can be seen that another important proportion (5.84%) of the respondents are girls of age under 15 years. These proportions show that about 94.16% of respondents' age above 15 years old.

Table 4.3: Distribution of respondent according to age category

Age	Frequency	Percentage	Cumulative Percentage
< 15 yrs	18	5,84	5,84
15-18 yrs	72	23,38	29,22
> 18 yrs	218	70,78	100,00
Total	308	100,00	

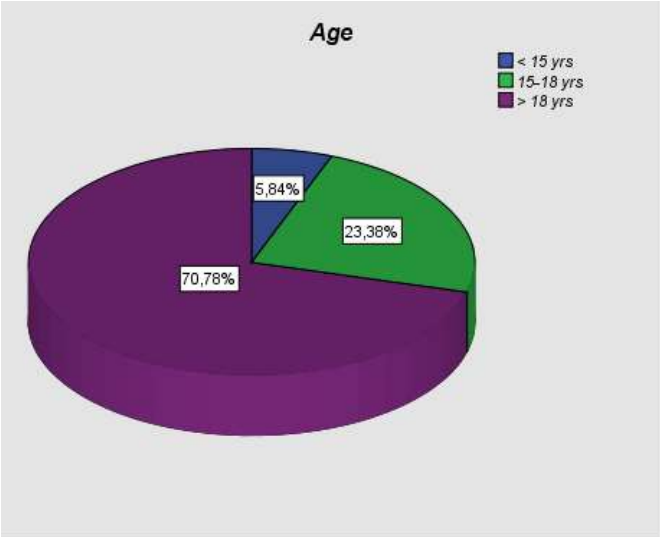


Figure 4.3: Distribution of respondent according to age

4.1.4. Distribution of girls according to parents' level of education

The table 4.4 and figure 4.4 display the distribution of respondents according to the highest level of education of their parents. We observe from the below table that 43.18% of the respondents (about 133 girls) have a secondary school level. Then about 27.27% of the respondents (about 84 girls) have a primary school level. Another proportion of about 18.51% of the respondents (about 57 girls) have a high school level. Still another proportion of about 9.42% of the respondents (about 29 girls) have a university level. It can be noticed that about 5% of parents have no previous formal education.

Table 4.4: Distribution of respondent according to parents' level of education

Educational level of parents	Frequency	Percentage	Cumulative Percentage
Primary	84	27,27	27,27
Secondary	133	43,18	70,45
High school	57	18,51	88,96
University	29	9,42	98,38
Others	5	1,62	100,00
Total	308	100,00	

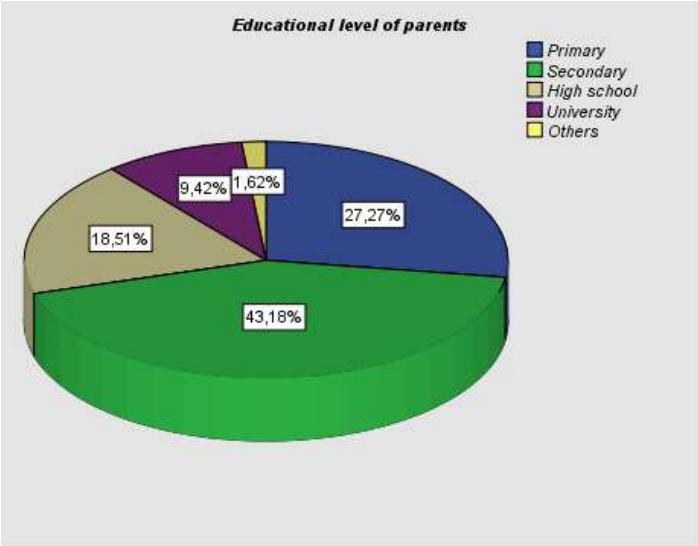


Figure 4.4: Distribution of respondent according to parents' level of education

4.1.5. Distribution of respondent according to parents' occupation

Parents' occupation plays a major role in the career decision-making of their children. From table 4.5 showing the different occupations of fathers, we see that 36.04% of the respondents have fathers who are businessmen, 24.03% of respondents have fathers who are farmers. Still another proportion (16.23%) has fathers who are civil servants. The rest of our respondents have fathers who are technician (13.96%) and from other professions (9.74%).

Table 4.5: Distribution of respondent according to parents' occupation

Occupation	Frequency	Percentage	Cumulative Percentage
Civil servant	50	16,23	16,23
Technicien	43	13,96	30,19
Business	111	36,04	66,23
Farmer	74	24,03	90,26
Others	30	9,74	100,00
Total	308	100,00	

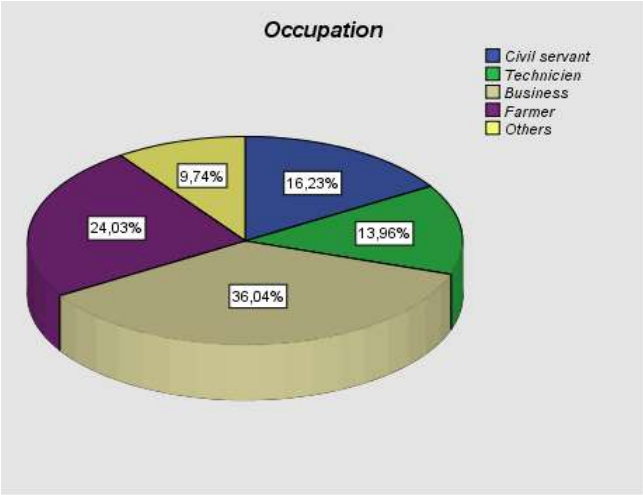


Figure 4.5: Distribution of respondent according to parents' occupation

4.1.6. Distribution of respondent according to region of origin

Table 4.6 and figure 4.6 display the distribution of girls according to their region of origin. Table 4.6 shows that the highest number of respondents (246) in the sample population were from the North-West region making a percentage of 76.87% and was followed by the South-West region with 33 girls making up 10.71% of the sample population; and the least came from the West region where 29 girls responded to the questionnaire making up the percentage of 9.42%.

Table 4.6: Distribution of respondent according to region of origin

Region	Frequency	Percentage	Cumulative Percentage
North-West	246	79,87	79,87
South-West	33	10,71	90,58
West	29	9,42	100,00
Total	308	100,00	

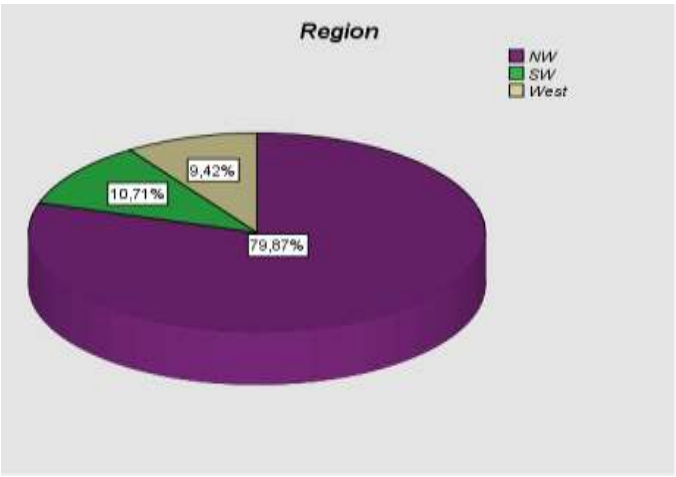


Figure 4.6: Distribution of respondent according to region of origin

4.1.7. Distribution of respondent according to religion

Table 4.7 and figure 4.7 display the distribution of girls according to their religion belonging. Table 4.6 shows that the highest number of respondents (141) in the sample population were Roman catholic making a percentage of 45.78% and was followed by the Protestant with 130 girls making up 42.21% of the sample population; and the least came from the Baptist where 37 girls responded to the questionnaire making up the percentage of 12.01%.

Table 4.7: Distribution of respondent according to religion

Religion	Frequency	Percentage	Cumulative Percentage
Protestant	130	42,21	42,21
Roman catholic	141	45,78	87,99
Baptist	37	12,01	100,00
Total	308	100,00	

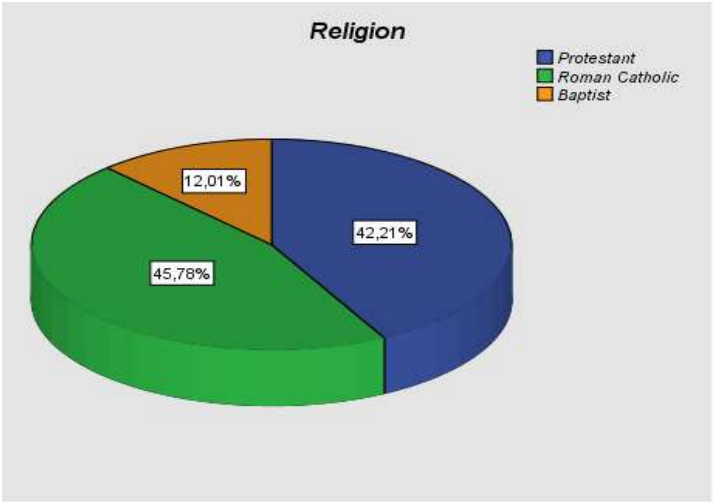


Figure 4.7: Distribution of respondent according to religion

4.1.8. Distribution of participants to interview

We conducted interview session with 10 girls from three schools. Table 4.8 display the distribution of girls according to their age, school, class level, option and parental status. From Table 4.8, we observe that 04 girls came from GTHS Bamenda, 03 girls came from GTHS Nkwen and 03 girls from GTHS Alabukum.

Table 4.8: Distribution of participants to interview

Participant	Age	School	Class	Option	Parental status	
					Mother	Father
Girl#01	21 years	GTHS Nkwen	Upper Sixth	Metal Construction	House wife	Petty trader
Girl#02	24 years	GTHS Nkwen	Upper Sixth	Civil Engineering Design and Construction	House wife	Driver
Girl#03	20 years	GTHS Bamenda	Upper Sixth	Civil Engineering Design and Construction	Custom officer	Businessman
Girl#04	21 years	GTHS Bamenda	Upper Sixth	Civil Engineering Public Works	House wife	Teacher Tech industrial
Girl#05	19 years	GTHS Bamenda	Upper Sixth	Electrical Technology and Installation	Taxation officer	University Lecturer
Girl#06	22 years	GTHS Nkwen	Lower Sixth	Civil Engineering Design and Construction	House wife	Driver
Girl#07	20 years	GTHS Bamenda	Upper Sixth	Civil Engineering Public Works	Businesswoman	Teacher Tech industrial
Girl#08	18 years	GTHS Alabukum	Lower Sixth	Civil Engineering Public Works	Teacher	Farmer
Girl#09	20 years	GTHS Alabukum	Upper Sixth	Civil Engineering Public Works	House wife	Businessman
Girl#10	21 years	GTHS Alabukum	Upper Sixth	Civil Engineering Public Works	Teacher of Electronics	Teacher Tech industrial

It can still be observed from the table above that, these girls are offered different specialities where male are dominant. Their family background reveals that all come from a modest family or home.

4.2. Presentation and description of respondents' opinions on our study variables

In this section, we are going to present and analyse the data collected from the sampled population with respect to the personal characteristics of the respondents and the data obtained from the opinions of the respondents following the order of items in constructed questionnaire.

4.2.1. Distribution of the respondents' opinions on social stereotypes

Table 4.9 below presents the distribution of the opinions of the respondents on social stereotypes. From the results in the table, we observe that the social environment of these girls perceives it to be ridiculous when females do the so called male jobs (M = 2.49) indicating that society perceives teachincal training to be too difficult for girls; so they constantly consider girls/women as being the weak sex (M = 2.19). One girl we interviewed, declared that "*some girls and some of my male class mates throw hurting slangs such as misdirected woman. I do ignore them and for those close to me I make them understand that a woman can do what men can do.*" (Girl#01). Another one said: "*I think girls shy away from technical trades because of fear, ignorance and the fact that most till hold on to the fact that it is a male issue.*"(Girl#09). The later expresses the view of the society on girls' choice for technical education.

Table 4.9: Distribution of the respondents' opinions on social stereotypes

	Mean	Std. Deviation
Girls/Women are considered as weak sex	2,19	1,314
teachincal training is too difficult for girls	2,38	1,446
there are occupations meant for men and women in the community	2,19	1,095
it is ridiculous when females do the so called male jobs	2,70	1,151
males should share in house hold task such as cooking washing dishes and so on	1,44	,614
technical industrial professions for females often disturb marriages and child bearing	2,16	1,338
Girls /women should be given equal opportunities with men for apprentiship in technical industrial trade	1,52	,617
girls have to same potentials as boys to offer technical subjects	2,61	1,427
Valid N (listwise)		

This social perception for the education of the girl child does not overule the fact that they still believe that technical education of the girl is only to prepare her for future marriage and childbearing (M = 2.16). The better return of education is seen from schooling the boy child than the girl, so girls have almost the same potentials as boys to offer technical subjects as one girl reported

> "*I feel no difference studying in a male dominant class. I find it normal after all I choose the option out of my personal conviction. Though there are very few girls in general in the technical trades I am not discourage. If I yield to mockery words from some female friends and even male classmates, I may be push to abandon. It is a strong fight, I will succeed in this field my results and output assures me*." (Girl#03).

4.2.2. Distribution of the respondents' opinions on parental attitudes

Table 4.10 displays the distribution of the respondents' opinions on parental attitudes and how it affects their education. The results on the table reveal that parents give preference in meeting the needs of male children than their female counterpart (M = 4.06). This signifies that a very high majority of the respondents agreed that their parents give them preference treatment and make decisions on the type of courses their daughters have to receive (M = 2.80). This explain why some girls are sometimes absent from or go late to school because of house chores.

Table 4.10: Distribution of the respondents' opinions on parental attitudes

	Mean	Std. Deviation
girls are weak and as such should not be allowed to do industrial technical edcuation	1,43	,613
Parents make decisions on the type of courses their daughters have to offer	1,42	,495
girls receive support from their parents on any course they want to offer	3,77	1,262
parents give preference in meeting the needs of male children than their female counterpart	4,06	1,135
parents visit schools to find out the welfare and the performance of their daughters	1,44	,497
girls are sometimes absent from or go late to school because of house chores	2,59	1,465
parents consider technical f ields obstruct girls from getting married	1,44	,497
girls need to go to school as much as boys	2,20	1,061
parents encourage their girls to go fo counselling on the choice of option to enrol in technical trades	3,88	,732
Valid N (listwise)		

It appears from the results in table 4.10 that parental attitudes play a significant role on girls access to technical and vocational education. According to the parents, girls are weak and as such should not be allowed to do industrial technical education. As reported by one girl we interviewed, "*I remember some of my late father's friends who discourage of my father to sponsor me in this field of study. Being not very educated his only consolation was that I will quickly have something to do in future. Financially it is an more expensive to many of our rural parents as compare to general education. The fear most girls nurture is in subjects such as mathematics, mechanics and so no*"(Girl#08). As such, girls need support from their parents on any course they want to enrol. Thus parents encourage their girls to go for counselling on the choice of option to enrol is technical trades.

4.2.3. Distribution of the respondents' opinions on socio-cultural practices

Table 4.11 provides the distribution of the respondents' opinions on socio-cultural practices and how it affects their education. The socio-cultural environment of these girls believes that women are meant for housework (M = 2.54). This signifies that some socio-cultural practices in these girls' tribe temper on women rights to education (M = 2.48). Thus, parents customs and traditional beliefs may hinder the girl child access to technical education.

Table 4.11: Distribution of the respondents' opinions on socio-cultural practices

	Mean	Std. Deviation
there are cultural practices that discriminate against woment in their tribe	1,57	,496
cultural practices in my tribe temper on women rights to education	2,37	1,289
in my culture, there are certain jobs that women cannot do	1,44	,497
male adults support females who offer technical trades	2,02	1,003
women are meant for housework	3,03	1,367
Valid N (listwise)		

In their believes, some people may be afraid when girls acquire too much education, they may likely have difficulties to find educated husbands. This push some parents to negotiate marriage without their daughters' knowledge. It appears from the results in table 4.11 that socio-cultural practices play a significant role on the education of their girl child, as one girl reported :

> "*The low enrolment of girls in technical industrial may have many reasons. Culture is a strong factor I belief. It has been a domain only for men for several decades so it will be gradual for girls to enter. There is a lack of industries where girls will be seen in active function and thus motivate both parents and pupils to enrol in technical industrial. More so, there are no universities to enrol after BACC F/ GCE A. Only few professional schools exist and admission into them is usually through competitive examination which is often so limited. Also sensitization needs to be done to increase awareness in this sector.*" (Girl#06).

4.2.5. Distribution of the respondents' opinions on girl's access to Technical Education

Table 4.12 provides the distribution of the respondents' opinions on girl's access to Technical Education. The results from the table reveal that girl's access to Technical Education is mainly express through the desire of girls to be offered industrial trades such as electricity, building and construction, motor mechanics (M = 4.01) because they believe they have the ability to cope with technical education (M = 2.27). One girl said : "*I do excel in technical subjects such as electrical installation, Measurement, and technology. In schoolwork, it is intelligent level not sex, so girls can do what boys are doing."* (Girl#10).

Table 4.12: Distribution of the respondents' opinions on girl's access to Technical Education

	Mean	Std. Deviation
You have the ability to cope with technical education	2,27	1,274
You want to offer industrial trades such as electricity, building and construction, motor mechanics	4,01	1,123
You are not afraid of industrial accident	2,09	1,009
You fear you may be the only member of your gender in a male dominated classroom	2,18	1,001
You would like to be a female engineer in your family	2,39	1,180
You would like to pursue university education rather than consider skills jobs	2,51	1,449
You view technical edcuation to solve the problem of youth unemployment	1,69	,941
You admire the system of evaluation in technical school	2,44	1,261
Valid N (listwise)		

The outcome of these opinions is that most of these girls would like to be female engineer in their family (M = 2.39). These results encourage parents to pay school fees and encourage their girl child to work hard in their school work (M = 2.65). These girls are not afraid of industrial accident and they do not even fear that they may be the only member of their gender in a male dominated classroom (M = 2.18). One girl affirmed : "*Being in a class of majority male does not raise any complex in me. Rather I feel great in my option especially as I excel academically than most boys. I was regional first according to GCE classification in the last probatoire in my option and I look forward to the best position in the BACC result*"(Girl#04). It appears from the results in table 4.12 that girl's access to Technical Education shows that a very high majority of these girls are highly motivated towards technical and vocational education.

4.3. Variability of the learning effectiveness by personal characteristics

The usual goal in data analysis is to efficiently describe and measure the strength of relationships between variables (Muijs, 2004). In this regard, bivariate descriptive statistics describe such relationships. The survey was conducted with sample population of secondary school girl in the Mezam Division with special interest in their background characteristics. So, the one way-ANOVA test is used to determine the variability of the participation of the girl-child in school by background characteristics (school, class, age category, parental level of education, parental occupation, region of origin and religion).

4.3.1. Variability of girls' access to technical education by school

Literature shows that girls' access to technical education varies according to school. We want to look at the variability of girls' access to technical education across the school attended by the respondent. We will be addressing the question: does girls' access to technical education differ across school? Since this is a case of comparison between many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical

edducation across school as shown in the table 4.13 below.

Table 4.13: Analysis of the effect on school on girls' access to technical education

School	Group descriptives statistics				ANOVA test	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
GTHS Bamenda	110	2,488	,35027	,0334	(2, 305)	1,237ns
GTHS Nkwen	144	2,438	,36241	,0302		
GTHS Alabukum	54	2,396	,41404	,0563		
Total	308	2,448	,36800	,0210		
Note: N = 308, ns (p > 0.05)						

The results shows that on average, girls' access to technical education significantly vary across schools, F(2, 305) = 1.237, p > 0.05 ; It means that girls' access to technical education is significantly influenced by the school they attend.

The overall analysis revealed a significant difference in girls' access to technical education for the different school, F(2, 305) = 1.237, p > 0.05 ; meaning that, girls' access to technical education is affected by the school they attend. We can then conclude that girls' access to technical education differs across schools in this area.

4.3.2. Variability of the participation of the girl-child in school by class

Literature shows that girls' access to technical education varies according to their class level in school. We want to look at the variability of girls' access to technical education across the class attended by the respondent. We will be addressing the question: does girls' access to technical education differ across the class level in school? Since this is a case of comparison between many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education by class as shown in the table 4.14 below.

Table 4.14: Analysis of the effect of class on girls' access to technical education in class

	Group descriptives statistics				ANOVA test	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
Form three	21	2,506	,4670	,1019	(4, 303)	1,649ns
Form four	38	2,418	,3680	,0597		
Form five	127	2,464	,3458	,0307		
Lower sixth	67	2,362	,3996	,0488		
Upper sixth	55	2,516	,3255	,0439		
Total	308	2,448	,3680	,0210		
Note: N = 308, ns (p > 0.05)						

The results shows that on average, girls' access to technical education significantly vary across their class (level in school), $F(4, 303) = 1.649$, $p > 0.05$; It means that girls' access to technical education is significantly influenced by their class level in school.

The overall analysis revealed a significant difference in girls' access to technical education by class, $F(4, 303) = 1.649$, $p > 0.05$; meaning that, girls' access to technical education is affected by their class level in school (class). It appears that girls' access to technical education differs across the class level in school in this area.

4.3.3. Variability of girls' access to technical education by age category

Literature shows that girls' access to technical education is affected by age. We want to look at the variability of girls' access to technical education across age category of respondent. We will be addressing the question: does girls' access to technical education differ across the different age category? Since this is a case of comparison of many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education across age category of respondent as shown in the table 4.15 below.

Table 4.15: Analysis of the effect of age category on girls' access to technical education

Age	**Group descriptives statistics**				**ANOVA test**	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
< 15 yrs	18	2,5625	,4721	,1113	(2, 305)	2,029ns
15-18 yrs	72	2,3854	,3850	,0454		
> 18 yrs	218	2,4593	,3509	,0238		
Total	308	2,4481	,3680	,0210		
Note: N = 308, ns (p > 0.05)						

The results shows that on average, girls' access to technical education does not significantly vary across age category, $F(2, 305) = 2.029$, $p > .05$; It means that girls' access to technical education is not significantly influence by their age category. The overall analysis revealed a non-significant difference in girls' access to technical education by age category, $F(2, 305) = 2.029$, $p > .05$; meaning that, girls' access to technical education is not affected by their age category. We can then conclude that girls' access to technical education does not differ across the age category of the girls in this area.

4.3.4. Variability of girls' access to technical education by parental level of education

Literature shows that girls' access to technical education varies according to their parents' level of education. We want to look at the variability of girls' access to technical education by the parents' level of education. We will be addressing the question: does girls' access to technical education influence by parental level of education? Since this is a case of

comparison of many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education by parents' level of education as shown in the table 4.16 below.

Table 4.16: Analysis of the effect of parents' educational level on girls' access to technical education

Educational level of parents	Group descriptives statistics				ANOVA test	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
Primary	84	2,513	,4480	,0489	(4, 303)	2,233ns
Secondary	133	2,450	,3559	,0309		
High school	57	2,401	,3060	,0405		
University	29	2,310	,2450	,0454		
Others	5	2,625	,1531	,0685		
Total	308	2,448	,3680	,0210		
Note: N = 308, ns (p > 0.05)						

The results shows that on average, girls' access to technical education significantly vary by their parents' level of education, F(4, 303) = 2.233, p > 0.05 ; It means that girls' access to technical education is significantly influence by their parents' level of education. The overall analysis revealed a significant difference in girls' access to technical education by parents' level of education, F(4, 303) = 2.233, p > 0.05 ; meaning that, girls' access to technical education is affected by their parents' level of education. It appears that girls' access to technical education does vary according to parents' level of education in this area. One girl said: "*I remember some of my late father's friends who discourage of my father to sponsor me in this field of study. Being not very educated his only consolation was that I will quickly have something to do in future*."(Girl#08).

4.3.5. Variability of girls' access to technical education by parents' occupation

Literature shows that girls' access to technical education varies according to their parents' occupation. We want to look at the variability of girls' access to technical education by the parents' occupation. We will be addressing the question: does girls' access to technical education vary by their parents' occupation? Since this is a case of comparison of many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education by the occupation of parents as shown in the table 4.17 below.

Table 4.17: Analysis of the effect of parents' occupation on girls' access to technical education

Occupation of parents	Group descriptives statistics				ANOVA test	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
Civil servant	50	2,157	,3552	,05023	(4, 303)	13,379***
Technicien	43	2,401	,4005	,06107		
Business	111	2,578	,2810	,02668		
Farmer	74	2,476	,2820	,03277		
Others	30	2,450	,5228	,09544		
Total	308	2,448	,3680	,02097		
Note: N = 308, *** (p <.001)						

The results shows that on average, girls' access to technical education significantly vary by their parents' occupation, $F(4, 303) = 13.379$, $p < 0.001$; It means that girls' access to technical education is significantly influence by their parents' occupation. The overall analysis revealed a significant difference in girls' access to technical education by parents' occupation, $F(4, 303) = 13.379$, $p < 0.001$; meaning that, girls' access to technical education is affected by their parents' occupation. It appears that girls' access to technical education does vary according to parents' occupation in this area.

4.3.6. Variability of girls' access to technical education by region of origin

Literature shows that girls' access to technical education varies according to their region of origin. We want to look at the variability of girls' access to technical education by region of origin. We will be addressing the question: does girls' access to technical education influence by region of origin? Since this is a case of comparison of many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education by region of origin as shown in the table 4.18 below.

Table 4.18: Analysis of the effect of the region of origin on girls' access to technical education

Region	Group descriptives statistics				ANOVA test	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
North-West	246	2,402	,3618	,0230	(2, 305)	10,453***
South-West	33	2,621	,3659	,0635		
West	29	2,647	,3026	,0562		
Total	308	2,448	,3680	,0210		
Note: N = 308, *** (p <.001)						

The results shows that on average, girls' access to technical education significantly vary by their region of origin, $F(2, 305) = 10.453$, $p < 0.001$; It means that girls' access to technical education is significantly influence by their region of origin. The overall analysis revealed a significant difference in girls' access to technical education by region of origin, $F(2, 305) =$

10.453, $p < 0.001$; meaning that, girls' access to technical education is affected by their region of origin. It appears that girls' access to technical education does vary according to region of origin in this area.

4.3.7. Variability of girls' access to technical education by religion

Literature shows that girls' access to technical education varies according to their religion. We want to look at the variability of girls' access to technical education by religion. We will be addressing the question: does girls' access to technical education by religion? Since this is a case of comparison of many means, we are going to use a univariate analysis of variance to assess the variability of girls' access to technical education by religion as shown in the table 4.19 below.

Table 4.19: Analysis of the effect of religion on girls' access to technical education

	Group descriptives statistics				**ANOVA test**	
	N	*Mean*	*Std. Dev*	*Std. Error*	*df*	*F*
Protestant	130	2,4529	,3375	,0296	(2, 305)	1,023ns
Roman Catholic	141	2,4645	,3962	,0334		
Baptist	37	2,3682	,3584	,0589		
Total	308	2,4481	,3680	,0210		
Note: N = 308, ns (p > 0.05)						

The results shows that on average, girls' access to technical education significantly vary by their religion, $F(2, 305) = 1.023$, $p > 0.05$; It means that girls' access to technical education is significantly influence by their religion.

The overall analysis revealed a significant difference in girls' access to technical education by religion, $F(2, 305) = 1.023$, $p > 0.05$; meaning that, girls' access to technical education is affected by their religion. It appears that girls' access to technical education does vary according to religion in this area.

4.3.8. Variability of girls' access to technical education by parents' level of education and occupation

It was hypothesised that girls' access to technical education will be influenced by parents' level of education and occupation. So, we want to look at the variability of girls' access to technical education by parents' level of education and occupation. We will be addressing the question: is girls' access to technical education affected by the interaction between parents' level of education and occupation? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by parents' level of education and occupation as shown in the table 4.20 below.

Tableau 4.20 : Tests of between-subjects effects of parents' level of education and occupation on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12,786[a]	18	,710	7,131	,000
Intercept	379,092	1	379,092	3805,517	,000
Edu level	1,036	4	,259	2,599	,036
Occupation	3,471	4	,868	8,710	,000
Edu level * Occup	4,835	10	,483	4,854	,000
Error	28,789	289	,100		
Total	1887,406	308			
Corrected Total	41,575	307			
R Squared = ,308 (Adjusted R Squared = ,264)					

The results shown in table 4.20 revealed that girls' access to technical education significantly varies with parents' level of education, $F(4, 289) = 2.599$, $p < 0.05$; It also shows that girls' access to technical education does significantly vary with parents' occupation, $F(4, 289) = 8.710$, $p < 0.001$. It is then observed that the interaction between parents' level of education and occupation does significantly affect girls' access to technical education ; $F(10, 289) = 4.854$, $p < 0.05$. The above results revealed that while the parents' level of education and occupation as individual factors does significantly affect girls' access to technical education, the parents' occupation does also significantly affect girls' access to technical education. In the same way, their interaction does too, meaning that the difference in girls' access to technical education between parents' level of education and does significantly vary between girls according to the occupation of their parents.

4.3.9. Variability of girls' access to technical education by parents' level of education and region

We want to assess the variability of girls' access to technical education by parents' level of education and region. We will be addressing the question: is girls' access to technical education affected by the interaction between parents' level of education and region? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by parents' level of education and region as shown in the table 4.21 below.

Tableau 4.21 : Tests of between-subjects effects of parents' level of education and region on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3,957[a]	9	,440	3,483	,000
Intercept	480,327	1	480,327	3804,981	,000
Parents' edu level	1,039	4	,260	2,057	,086
Region	,743	2	,372	2,943	,054
Edulevel * Region	,677	3	,226	1,789	,149
Error	37,618	298	,126		
Total	1887,406	308			
Corrected Total	41,575	307			
a. R Squared = ,095 (Adjusted R Squared = ,068)					

The results shown in table 4.21 revealed that girls' access to technical education does not significantly vary with the parents' level of education, $F(4, 298) = 2.057$, $p > 0.05$; It also shows that girls' access to technical education does not significantly vary with the region of origin of these girls, $F(2, 298) = 2.943$, $p > 0.05$. Still, in the same line, the interaction between parents' level of education and region does not significantly affect girls' access to technical education ; $F(1, 298) = 1.789$, $p > 0.05$. The above results revealed that the interaction between parents' level of education and region does not significantly affect girls' access to technical education, meaning that the difference in girls' access to technical education as observed between parents' level of education and region happened by chance.

4.3.10. Variability of girls' access to technical education by parents' level of education and religion

It was hypothesised that girls' access to technical education will be influenced by parents' level of education and religion. So, we want to look at the variability of girls' access to technical education by parents' level of education and religion. We will be dealing with the question: is girls' access to technical education affected by the interaction between parents' level of education and religion? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by parents' level of education and religion as shown in the table 4.22 below.

Tableau 4.22 : Tests of between-subjects effects of parents' level of education and religion on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	8,883[a]	12	,740	6,680	,000
Intercept	450,688	1	450,688	4066,849	,000
Edu level	1,386	4	,347	3,127	,015
Religion	,464	2	,232	2,096	,125
Edulevel * Religion	7,177	6	1,196	10,794	,000
Error	32,692	295	,111		
Total	1887,406	308			
Corrected Total	41,575	307			
a. R Squared = ,214 (Adjusted R Squared = ,182)					

The results shown in table 4.22 revealed that girls' access to technical education does not significantly vary with the religious belonging, $F(2, 295) = 2.096$, $p > 0.05$; It also shows that girls' access to technical education does significantly vary with the parents' level of education, $F(4, 295) = 3.127$, $p < 0.05$. But, in the contrary, the interaction between parents' level of education and religion does not significantly affect girls' access to technical education ; $F(6, 295) = 10.794$, $p < 0.001$. These results revealed that the interaction between parents' level of education and religion does significantly affect girls' access to technical education.

4.3.11. Variability of girls' access to technical education by occupation and region

We would like to test the variability of girls' access to technical education by occupation and region. We will be addressing the question: is girls' access to technical education affected by the interaction between occupation and region? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by occupation and region as shown in the table 4.23 below.

Tableau 4.23 : Tests of between-subjects effects of occupation and region on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10,870[a]	9	1,208	11,721	,000
Intercept	338,082	1	338,082	3281,118	,000
Occupation	8,058	4	2,014	19,550	,000
Region	,648	2	,324	3,143	,045
Occupation * Region	3,856	3	1,285	12,476	,000
Error	30,706	298	,103		
Total	1887,406	308			
Corrected Total	41,575	307			
a. R Squared = ,261 (Adjusted R Squared = ,239)					

The results shown in table 4.23 revealed that girls' access to technical education does not significantly vary with parents' occupation, $F(4, 298) = 19.550$, $p < 0.001$; It also shows that girls' access to technical education does significantly vary with the region, $F(2, 298) = 3.143$, $p < 0.05$. These observations show that, the interaction between occupation and region does significantly affect girls' access to technical education ; $F(3, 298) = 12.476$, $p < 0.001$. The above results revealed that the two factors (parents'occupation and region) interact to influence girls' access to technical education.

4.3.12. Variability of girls' access to technical education by occupation and religion

It was hypothesised that girls' access to technical education will be influenced by occupation and religion. So, we want to look at the variability of girls' access to technical education by occupation and religion. We will be addressing the question: is girls' access to technical education affected by the interaction between occupation and religion? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by occupation and religion as shown in the table 4.24 below.

Tableau 4.24 : Tests of between-subjects effects of occupation and religion on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	10,065[a]	13	,774	7,224	,000
Intercept	884,984	1	884,984	8257,170	,000
Occupation	7,373	4	1,843	17,198	,000
Religion	1,849	2	,924	8,624	,000
Occupation * Religion	3,209	7	,458	4,277	,000
Error	31,510	294	,107		
Total	1887,406	308			
Corrected Total	41,575	307			
a. R Squared = ,242 (Adjusted R Squared = ,209)					

The results shown in table 4.24 revealed that girls' access to technical education does not significantly vary with the occupation, $F(4, 294) = 17.198$, $p < 0.001$; It also shows that girls' access to technical education does significantly vary with the occupation and religion, $F(2, 294) = 8.624$, $p < 0.001$. But, in the contrary, the interaction between occupation and religion does not significantly affect girls' access to technical education ; $F(7, 294) = 4.277$, $p < 0.001$. The above results revealed that the interaction occupation and religion constitute a significant factor in girls' access to technical education.

4.3.13. Variability of girls' access to technical education by region and religion

It was hypothesised that girls' access to technical education will be influenced by region and religion. So, we want to look at the variability of girls' access to technical education by region and religion. We will be addressing the question: is girls' access to technical education affected by the interaction between region and religion? Since this is a case of comparison of many means, we are going to use a factorial analysis of variance to assess the variability of girls' access to technical education by region and religion as shown in the table 4.26 below.

Tableau 4.25 : Tests of between-subjects effects of region and religion on girls' access to technical education

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	4,461[a]	6	,744	6,030	,000
Intercept	814,906	1	814,906	6609,026	,000
Region	2,499	2	1,249	10,133	,000
Religion	1,109	2	,555	4,497	,012
Region * Religion	1,734	2	,867	7,030	,001
Error	37,114	301	,123		
Total	1887,406	308			
Corrected Total	41,575	307			
a. R Squared = ,107 (Adjusted R Squared = ,090)					

The results shown in table 4.25 revealed that girls' access to technical education does significantly vary with the region, F (2, 301) = 10.133, $p < 0.001$; It also girls' access to technical education does significantly vary with the religion, F (2, 301) = 4.497, $p < 0.05$. But, in the contrary, the interaction between region and religion does significantly affect girls' access to technical education ; F (2, 301) = 7.030, $p < 0.001$. The above results revealed that region and religion are factors that combine to significantly affect girls' access to technical education.

4.4. Verification of research hypotheses

In this section, we are going to verify our research hypotheses. As a statistical tool, the Pearson correlation coefficient will be used to test our research hypotheses. Also, we will use multiple regressions to assess the predictive nature of sociocultural factors on girls' access to technical education. The statistical processing of the data was done through the SPSS software (SPSS 23.0 for Window) as shown in table 4.27 below.

Tableau 4.26: Means, standard deviation and correlations between our study variables

		1	2	3	4
1	Social Stereotypes	-			
2	Parental Attitudes	0,549***	-		
3	Socio-cultural Practices	0,327***	0,433***	-	
4	Access to Technical Education	0,502***	0,452***	0,240***	-
Mean		2,630	2,710	2,084	2,448
Std. Deviation		0,443	0,456	0,541	0,368
Note: N = 308, *** p < 0.001					

Table 4.26 above displays the correlation matrix of our study variables. The results show

majors strong correlations between our study variables, namely between the independent variables (social stereotypes, parental attitudes and socio-cultural practices) and the dependent variable (girls' access to technical education). The results also display the means and standard deviations of the variables. The standard deviations show that there is a relative dispersion of scores for each variable.

4.4.1. Social stereotypes and girls' access to technical education (RH1)

Social stereotypes is a measure or an index of social involvement. A child, brought up with affection and care in the least restrictive environment would be able to cope up better with the sighted world. That is why the first research hypothesis (RH1) claims that social stereotypes influence girls' access to technical education. The shape of scatter plot in figure 4.8 displays the direction of the relationship showing the relationship between social stereotypes and girls' access to technical education.

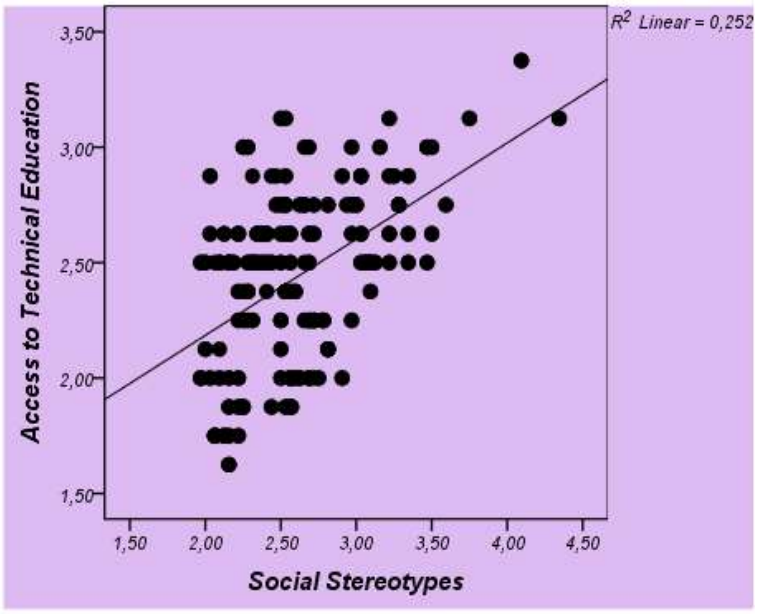


Figure 4.8: Scatter plot showing the correlation between social stereotypes and girls' access to technical education

The results have shown that there was a significant positive correlation between Social stereotypes and girls' access to technical education, r (306) = 0.502, ($p < 0.001$). From this result we can conclude that social stereotypes significantly influence girls' access to technical education. This test-value gives a coefficient of determination of 0.2520, meaning that 25.20% of the variability of girls' access to technical education is explained by social stereotypes. Some of the reasons girls shy away from technical education is because of fear of social stigmatization and wrong perception, as one girl said: "*There may be many reasons but is most evident is fear. Most girls have the wrong perception about technical industrial. They believe it is too difficult*

involving a lot of calculations, weight lifting and so no. Some parents also may deny their daughters to enrol for fear of sexual harassment." (Girl#08). Those who overcome these social preconceptions, they will likely perform well in their speciality, as one girl pointed out: "*I do excel in technical subjects such as electrical installation, Measurement, and technology. In school work it is intelligent level not sex so girls can do what boys are doing.*"(Girl#10).

4.4.2. Parental attitudes and girls' access to technical education (RH2)

Parental attitudes is a measure or an index of parental care. A child need parental attention, affection and care in an environment free of all sorts of maltreatment and bully. That is why the second research hypothesis (RH2) claims that parental attitudes influence girls' access to technical education. The shape of scatter plot in figure 4.9 displays the direction of the relationship showing the relationship between parental attitudes and girls' access to technical education.

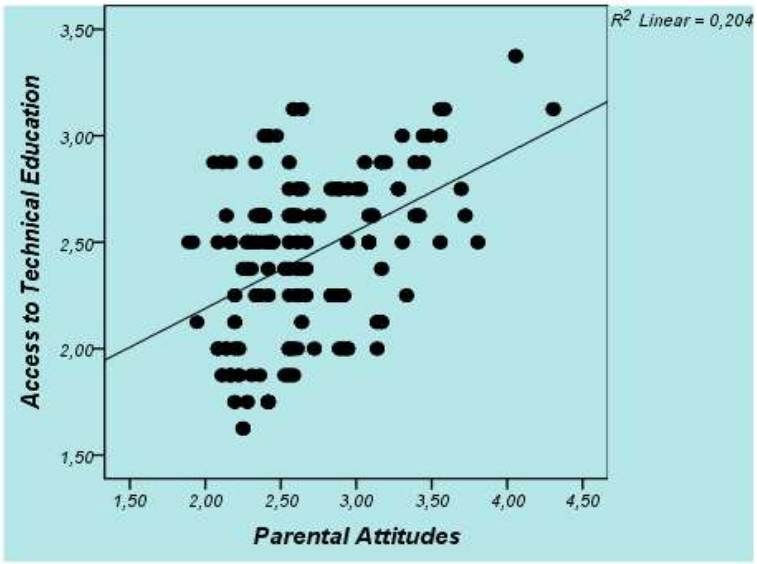


Figure 4.9: Scatter plot showing the correlation between parental attitudes and girls' access to technical education

The results have shown that there was a significant positive correlation between parental attitudes and girls' access to technical education, r (306) = .452, ($p < 0.001$). From this result we can conclude that parental attitudes significantly influence girls' access to technical education. This test-value gives a coefficient of determination of 0.2040, meaning that 20.40% of the variability of girls' access to technical education is explained by parental attitudes. This correlation is confirmed by the discources of the girls, for one girl affirmed that: "*I feel proud and special. No inferiority complex of any sort. I am happy with myself and confident in what the future holds. My parents make a boast of me they call me "strong woman", I won the prize of best student in my class twice all these make glad about my choice.*"(Girl#10).

4.4.3. Socio-cultural practices and girls' access to technical education (RH3)

Socio-cultural practices is a measure or an index of parental involvement. A child, brought up with affection and care in the least restrictive environment would be able to cope up better with the sighted world. That is why the third research hypothesis (RH3) claims that socio-cultural practices influence girls' access to technical education. The shape of scatter plot in figure 4.10 displays the direction of the relationship showing the relationship between socio-cultural practices and girls' access to technical education.

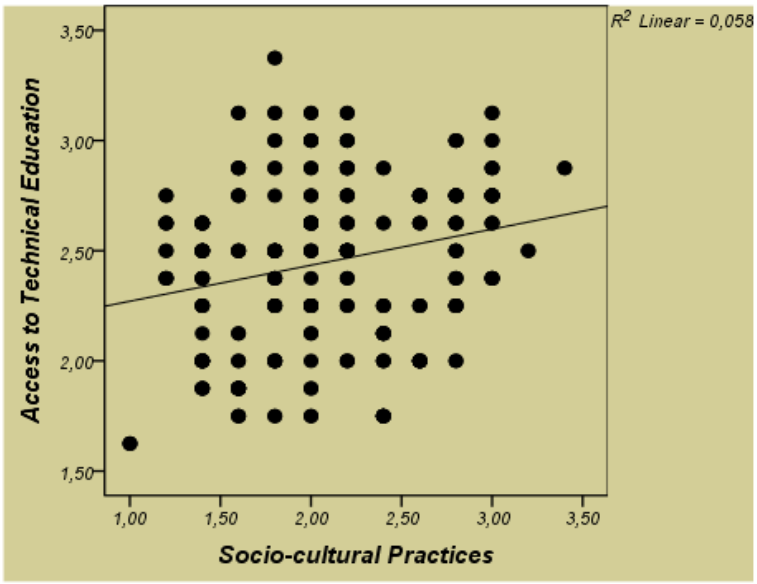


Figure 4.10: Scatter plot showing the correlation between socio-cultural practices and girls' access to technical education

The results have shown that there was a significant positive correlation between socio-cultural practices and girls' access to technical education, r (306) = .240, ($p < 0.001$). From this result we can conclude that socio-cultural practices significantly influence girls' access to technical education. This test-value gives a coefficient of determination of 0.058, meaning that 5.80% of the variability of girls' access to technical education is explained by socio-cultural practices. The influence of socio-cultural practices on girls' access to technical education is attested by the saying one girl:

> *"The low enrolment of girls in technical industrial may have many reasons. Culture is a strong factor I belief. It has been a domain only for men for several decades so it will be gradual for girls to enter. There is a lack of industries where girls will be seen in active function and thus motivate both parents and pupils to enrol in technical industrial. More so, there are no universities to enrol after BACC F/ GCE A. Only few professional schools exist and admission*

into them is usually through competitive examination which is often so limited. Also sensitization needs to be done to increase awareness in this sector." (Girl#06).

The society is progressively accepting the fact that female fools can do a job where males are dominant. That is why we can see guidance consellors devoting enormeous efforts to encourage young girls to choice male dominant specialities; as one affirmed:

"*I did receive educational counselling. This was during the Open Door of GTHS Bamenda when my class in secondary school was assigned to represent our school. In a presentation the guidance counsellor showed us all the options available after GCE and said even girls can enrol. He gave me a rundown of successful women in the technical industrial career this further motivated me in my choice and study.*" (Girl#04).

4.4. Prediction of girls' access to technical education

Several authors have emphasized the importance of girls' access to technical education and have provided prescriptions for improving their participation. In that line, much research has been carried out to predict the participation of girls' access to technical education. After a multiple hierarchical regression analysis, we consider now the parameters of the model for the girls' access to technical education.

In the first model, R2=0.252. This implies that the predictor variable (social stereotypes) accounts for 25.20% of the variability of girls' access to technical education. But for the second model, there is a minimal increase, because $\Delta R^2 = .006$ is not significant. This implies that the predictor variable (social stereotypes and parental attitudes) account for 25.80% of the variability of girls' access to technical education. But the third model is a better one, because $\Delta R^2 = .015$ is not significant. This implies that the predictor variable (social stereotypes, parental attitudes and socio-cultural practices) account for 27.30% of the variability of girls' access to technical education. Thus, the third model is a better predictor of girls' access to technical education.

Table 4.27: Coefficients of the regression model for the girls' access to technical education

Model		***B***	***Std. Error***	***Beta***	***t***	R^2	ΔR^2
1	(Constant)	1,352	,110		12,330	0,252***	0,252***
	Social Stereotypes	,417	,041	,502	10,144		
2	(Constant)	1,380	,111		12,451	0,258	0,006
	Social Stereotypes	,611	,130	,735	4,700		
	Parental Attitudes	-,198	,126	-,246	-1,572		
3	(Constant)	1,299	,114		11,355	0,273*	0,015*
	Social Stereotypes	,711	,135	,855	5,274		
	Parental Attitudes	-,341	,137	-,422	-2,483		
	Socio-cultural Practices	,097	,039	,143	2,521		
Note : N = 308, * = p<0.05 ; *** = p<0.001							
a. Dependent Variable: Access to Technical Education							

The table 4.27 below presents b-value estimates. These values indicate the individual contribution of each predictor to the model. Social stereotypes significantly predicts girls' access to technical education, $\beta = .855$, $t(306) = 5.274$, $p<.001$, and parental attitudes significantly predict girls' access to technical education, $\beta = -0.422$, $t(306) = -2.483$, $p < 0.05$ and socio-cultural practices significantly predict girls' access to technical education, $\beta = 0.147$, $t(306) = 2.521$, $p < 0.05$. Social stereotypes, parental attitudes and socio-cultural practices emerge as the best predictors of girls' access to technical education. It means that to improve girls' access to technical education in this area, intervention should be done on social stereotypes, parental attitudes and socio-cultural practices.

This chapter sets out to present and analyze the data which were obtained through the use of the questionnaire constructed in relation to the variables of study. Tables and charts were used to give a descriptive representation of results. The univariate analysis of variances was used to assess the effect the background characteristics on girls' access to technical education. The verification of research hypotheses was done through the use of Pearson correlation coefficient; and the stepwise multiple regression was use to predict girls' access to technical education. The next chapter will be dealing with the discussion of findings.

CHAPTER FIVE
DISCUSSION OF FINDINGS

Introduction

This chapter sets out to present the discussion of findings, recommendations and suggestions for further study. The discussion of findings will be done with the support of theories, elements of literature review and data collected from the field. The chapter is divided into three parts. The first part deals with the summary of the findings, the second part enhances the discussion of the findings and the third part looks at recommendations and suggestions for further study.

5.1. Summary of findings.

The study was aimed at assessing the extent to which socio-cultural determinants affect female access to technical industrial education. The data collected were analysed using the one way analysis of variance (ANOVA), the independent sample student t-tests, the Pearson correlation coefficient and the Stepwise multiple regression. After the verification of hypotheses, all our research hypotheses were confirmed and the following results were obtained:

- There is a significant positive correlation between social stereotypes and female access to technical industrial education
- Parental attitudes significantly correlate with female access to technical industrial education
- Sociocultural practices significantly influence female access to technical industrial education.

5.2. Discussion of findings

This section proposes a discussion to our findings related to each research hypothesis. An interpretation as well as a comparison will follow so as to see if our results are convergents with previous studies. If that is not the case, we will have some possibles explanations. Our analysis will focus on our four research hypotheses and will end with a brief conclusion.

5.2.1. Social stereotypes and female access to technical industrial education

The first hypothesis of our work states that there is a significant relationship between social stereotypes and female access to technical industrial education. Based on the analysis of data, it shows that this hypothesis is confirmed, $r(306) = 0.502$, ($p<0.001$). This result indicates that we have no chance of making an error if we accept that there is an association between social stereotypes and female access to technical and industrial education.

Technical education involves technological know-how which is a scientific study and the application of scientific methods to practical tasks in the industry for the production of materials for goods and services of human beings. According to Ezeji (2011) in Adelakun, Oviawe and Barfa, (2015), it is a way of applying methods, tools, technical knowledge, machines and systems in the solution of human problems. This means that it prepares people for skillful performance on practical issues, thus, enabling them to fully acquire the competences that would enable them to participate in the development processes of the society.

Pursuing its long-standing commitment to the improvement of the status of women, UNESCO pays special attention to the equal access of girls and boys to scientific, technical and vocational education and training. In its Agenda for Gender Equity, UNESCO commits itself to encourage "equal access to knowledge in all fields, notably within science and technology" and aims at "substantially increasing the participation of women in science and technical education programmes and encouraging their access to scientific and decision -making bodies". Furthermore, in the Beijing Platform for Action (1995), UNESCO (2010) was designated as the lead agency for implementing paragraph 87, which underlines the need to eliminate differences between women and men and boys and girls with regard to opportunities in education and training.

The results of this finding reveals that this objective of UNESCO has not yet been attained as we discover that many women are still undergoing preferential treatment as far as access to technical education is concern and this is done based on the fact that they have been cognitively categories as women who are "*weaker vessels*". We observed that most of the female students were heavily involved in domestic chores. Because of this involvement in household work and low family income, girls had either no time to study or they were already exhausted by the day-end. This situation spells the presence of gender-bias social construct that always burdens girls with domestic responsibilities and sets boys free as bread winner of the family in the future. The study furnishes several reasons explaining why girls were overloaded with domestic works. Firstly, girls, by following socio-cultural orientation, are expected to be obedient and being so, it is usually they who should bear the responsibilities. Secondly, girls themselves emulated other girls, mothers and sisters as role models. This falls within the context of social observation theory by Bandura. Here most girls admire being like their mothers even at a younger age. Another factor preventing girls from getting involved in technical industrial education is the issue of pregnancy complications. Most of the girls themselves are aware of the stress pregnant women go through and as such they do not see themselves moving with

machines left and right in enterprises. Most of them prefer to do mild activities while waiting for delivery.

UNESCO (2010) pointed out that in Africa, the area of science and technology is the one with the highest shortfall of national human resources and many countries are required to seek expertise from other countries. It is estimated that the developing countries of Africa need at least 200 scientists per one million individuals for effective industrial development. If this level of scientific and technological input is to be achieved, no African country can afford to leave 50 per cent of the population. This shortfall of national human resource in Africa should be as a result of the fact that women who constitute the bulk of the population are systematically categorized not fit, out of the process of scientific, technical and vocational education. At time much is said verbally and a lot of literature made on this subject and strategies to optimizing female involvement in technical industrial education but nothing is being practically done to see that it become a reality.

This would have served as a stimulus for the Cameroonian policy makers to encourage female access to technical education so as to provide a better solution to this problem but on the contrary, nothing serious seems to be taking place even in terms of erasing social stereotyping practices and cultural values which hinder girls from participating in technical education. Babalola and Adedeji (1997) also confirmed that girls, throughout the ages and everywhere in the world, have always been considered inferior to boys in almost every aspect. In the context of our study item 2 and 8 on the table on social stereotypes reveals that majority of the respondents accepted the statements that technical training is too difficult for girls and girls do not have the same potentials for technical education as boys. This tie with the theory of gender base schema (Benn, 1981) which stipulates that information about gender role attitudes might impact people's perception and expectations of men and women. This also shows that it would be difficult for Cameroon to become an emergent economy by 2035 since women who make up more than half of the active population is not actively involved in technical and industrial education which is an essential key to industrialization and subsequent development.

Egun and Tib (2010) pointed out that Sex-stereotyped occupation of the male over the female is a culture which has reinforced the notion of women in to believing that it is taboo to venture in to an occupation that is preserve of the males. This no doubt has affected marriages, as women that have ventured in to such vocations find it difficult getting married. Gender differential treatment is extending to classroom lessons. While the boys are expected to do better in mathematics and science, the girls are expected to do better in home economics and certain art

subject (Nnachi, 2008).Thus intellectual psychology of depression is developed. This does not only take place in general education. The same scenario prevails in technical education were most of the women are not encourage to offer technical industrial subjects but are encourage to offer commercial subjects. This is because many parents and even teachers and guardian counselors do not really see the women succeeding in technical industrial education not only because they have limited brains as people may stipulates but also because they want they to fit culturally. When the girls are psychologically depressed it becomes difficult for them to choose a carrier in life since they would like evaluate themselves as not being fit for certain jobs.

Looking at the principles of career choice theory by Ginzer (1972), we see that female personality in the Cameroonian society has been oppressed by culture and this discourages females from every attempt to indulge in technical and industrial education. From the perspective of human capital theory, the female folks would not be able to participate in effective production processes because they have not been encouraged by culture to acquire the necessary skill through technical education. This implies the production level of the society would remain very low because the majority of the populations (women) are not included in such processes. For a nation would only become transformed when its human resources are first transformed.

5.2.2. Parental attitudes and female access to technical industrial education

The second hypothesis of this work states that parental attitudes significantly influence female access to technical industrial education. Based on the analysis of data, it shows that this hypothesis is confirmed, $r(306) = 0.452$, ($p<0.001$). This result indicate that we have no chance of making an error if we accept that there is an association between parental attitudes and female access to technical and industrial education. The figure is a positive figure thus revealing that the relationship between the two variables is a positive relationship and is moderate.

For Egun and Tibi (2010), opines that the gap imbalance between male and female education arose from a lot of cultural practices in society resulting from deeply fixed prejudices, attitudes, customs, behavioral decisions and procedure. And these combine to discriminate against women rights and access to educational opportunities. Religious and cultural practices biased against women are long aged problems (Okojie, 1995) and Igbe (2007) stressed that the belief that women being God's creation is a weaker vessel and has shallow brain buttressed this point.

Modi (1993) expressed education as in which teachers and learners come together in an effort to share meaning concerning the concepts and skills in the curriculum. He further stated that teachers and students bring with it a complex set of causes that directly influence the efforts,

actions and conducts of education agents. Ogun (1993) in Egun and Tibi (2010) further expantiates that perception, belief systems and existing knowledge, life style life needs and drives influence choice and entrance into occupation and professions, thus giving meaning to human resources and the manner in which people think, feel and act in their environment. One of such areas that have been so affected by these factors is the girl-child access to the study of science subjects, thereby creating a gap in male-female ratio in vocational education.

We also observed that there are many forces that hinder girls' access to technical industrial education. Firstly, subsistence farming demanded children to be engaged in agriculture, making girls the first victims. Secondly, social values that encourage girls to be domesticated did not allow family and girls to consider education as necessity. Thirdly, gender biased division of work never realized the importance of education for girls. In the fourth place, parental illiteracy, especially of mothers, did not help much in daughter's education. Lastly, low economic status of the people was another factor affecting their education. But what are the factors that are responsible for preventing the girls from participating or for their low representation in technical industrial subjects? They are discussed below.

Parental philosophy behind the upbringing of female children matter a lot. The responsibility of training a child always lies in the hand of the parents. This is congruent with the common assertion of sociologists that education can be an instrument of cultural change which is being taught from home is relevant in this discuss. It is not out of place to imagine that parental socio–economic background can have possible effects on the academic achievement of children in school. Whatsoever affect the development environment of children would possibly affect their education or disposition to it. Parental status is one of such variables.

Rothestein (2004) has asserted as follows

> "*Parents of different occupation classes often have different styles of child rearing, different ways of disciplining their children and different ways of reacting to their children. These differences do not express themselves consistently as expected in the case of every family; rather they influence the average tendencies of families for different occupational classes*."

(Rothestein, 2004). In line with the above assertion, Hill et al.(2004) had also argued that socio-economic status of parents do not only affect the academic performance, but also makes it possible for children from low background to compete well their counterparts from high socio-

economic background under the same academic environment. Moreover, Smith, Fagan and Ulvund (2002) had asserted that significant predicator of intellectual performance at age of 8 years included parental socio economic status (SES). In the same vein, other researchers had posited that parental SES could affect school children as to bring about flexibility to adjustment to the different school schedules (Guerin et al., 2001).

Sacker et al (2002) set out to examine how inequalities in educational achievement and adjustment come about. It has been well known for decades that pupils' educational achievement is related to parents' social class yet the mechanisms that form this relationship are not well understood. The present interest in this model is the presumed role for parental involvement. Involvement is assumed to be a working link between social class and pupil achievement and adjustment. In this process, involvement is assumed to be influenced by material deprivation and parental aspiration. The poorer are people's circumstances the more difficult it is assumed to be to support a child's educational development. For example, many parents had little or no time to help children in their studies at home. Since most of them are farmers and illiterates, they do not even know how to begin the help process.

Varial (2014) opines that there are principally four parenting styles such authoritarian, authoritative, permissive and uninvolved styles that can affect students learning and subsequent output in different ways. Because of their strong influences on a learner's personality, many researchers have investigated the link between parenting style and academic performance and have found a strong connection. Parents who care about their children's academic performance should familiarize themselves with these parenting styles, adapting a new one if they feel it will better serve their kids' goals. Baumrind's (1971) in (Darling & Steinberg, 1993) seminal work on the classification of parenting styles has been essential in influencing research on parenting and its effect on children and adolescents. In her work she identified three types of parenting styles: authoritative, authoritarian, and permissive. According to her, authoritative parenting which comprises emotional support, high standards, appropriate autonomy granting and unequivocal, bidirectional communication has been shown to help children and adolescents develop an instrumental competence distinguished by the balancing of societal and personal needs and responsibilities.

Brown and Iyengar (2008) stress that behavioral control and psychological control were found to be two inherent features of parental style that have a direct effect on student achievement. Adolescents' perceived level of independence when interacting with their parents also seemed to have a direct relationship on their academic achievement. Research concerning

children's progress in mathematics as related to parenting style and gender stereotype was also uncovered. Evidence was found to support the notion that parental education can have an indirect impact on children's academic achievement in various cultures.

Research Implications are identified including the need for applied research in learning communities factoring in variables for family structure, expectations, ethnicity, communication, and involvement. Parenting style focuses on two major elements of parenting: parental responsiveness and parental demandingness. Parental responsiveness (parental warmth or supportiveness) refers to the extent to which parents intentionally foster individuality, self-regulation, and self-assertion by being attuned, supportive, and acquiescent to children's special needs and demands (Baumrind,1991). This is quite different from the fact we obtained from the field. For many students especially female students were not receiving support for their parents as far as their education is concerned. This would certainly go a long way to discourage them from schooling and performing better.

The results also indicated that when students feel supported and loved by their parents, they have more confidence in their own ability to find career information and to choose a career that would be interesting and exciting to them. This is important because other research shows that adolescents who feel efficacious regarding career decision-making tend to make more satisfying career choices later in life Parental attachment Navin (2009) has been shown to be positively correlated with career exploration. Navin (2009) found that parental attachment, defined as the extent to which one feels emotionally close to and supported by one's parents, was positively related to career exploration.. Similarly, according to Navin (2009), Lee and Hughey (2001) found that parental attachment was positively correlated with career maturity, which is defined, as how prepared an adolescent is to make career decisions. Though career maturity may not be synonymous with career exploration, career exploration is a necessary step in the process of gaining career maturity.

According to Navin (2009), parental attachment is important for self-efficacy, defined as how confident an individual is that he/she will be good at his/her future career. Effective career exploration is necessary to facilitate feelings of career self-efficacy. This study also lends support to the idea that parental attachment is important for career exploration. Some researchers have suggested that the reason for the relationship between parental attachment and various aspects of career development is that a secure attachment to one's parents provides a safe place for one to go for emotional support (Navin, 2009).Career exploration requires that an individual actively seek out information from various professionals such as counselors. This type of

behavior has the potential to be scary or stressful for a young adult. Thus, the security of parental attachment is important in that they help the individual feel emotionally supported and protected.

5.2.3. Sociocultural practices and female access to technical education

The third hypothesis of our work states that there is a significant relationship between Customs and Traditional practices which influence female access to technical industrial education. Based on the analysis of data, it shows that this hypothesis is confirmed, $r(306) = 0.240$, ($p<0.001$). This result indicates that we have no chance of making an error if we accept that there is a link between sociocultural practices and female access to technical and industrial education.

According to scientific, technical and vocational education of girls in Africa (1999) Socio-cultural barriers were identified as being among the greatest impediment to women's access to scientific and technological education, often due to unconscious influences in the home from parental/family opinions, cultural and social norms. In general, the education of boys is given preference over that of girls. Economically troubled families prefer to invest their limited resources in the education of boys rather than of girls, since girls might eventually marry and thus transfer their knowledge, prestige and income to the family into which they marry. The ability of girls and women is called into question: girls are discouraged from taking scientific and technical courses, since it is generally thought that they are too difficult and therefore appropriate only for men. The general attitude of society towards women is not supportive of women scientists, and there are stereotyped images of scientific and technical careers being incompatible with a mother's role and which, therefore, jeopardize women's chances of getting married. These negative social attitudes create a lack of self-confidence among girls and women in their ability and motivation to opt for science

Culturists like Bourdieu (1990) portray that school culture is different in the treatment of girls and it labels them as “failure” when they cannot keep pace with boys in non- traditional options. This entails that the school programmes and environment in most of the cases do not encourage females to be part of the system. In other words, the school culture is non pro-women. Furthermore the culture of the society victimized women in all aspects. Within the context of our study we observe six socio-cultural values that hamper girls’ involvement in technical industrial education girls. Firstly, they were viewed as family’s liability than assets as they are supposed to be married off to others. Secondly, virgin marriage remains a prime concern of the parents thus precipitating early marriage. Thirdly, they are used “*showpiece”*in fairs and festivals taking place in the community. Fourthly, they are treated as “*sex objects*”. Fifthly, they are the “*objects*”

to be domesticated and lastly, they are not involved in the decision making cycles. Such gender based values and perceptions determine the ceiling in girls' education and occupation. The outlook of society towards girls, to a larger extent, shaped their mind and self-identity, and determined their position in society, thereby affecting their interest in higher academic pursuits. (Eagly, 1987). As a consequence of the concomitant sex differences in social behavior, the expectancies of men and women began to diverge (Eagly, 1987). These expectancies are therefore transmitted to future generations and, in turn, impinge on the social behavior of each gender and represent sexual stereotypes. Accordingly, the behavior of men and women is governed by the stereotypes of their social roles.

It could be argued that the manner in which culture has unequally distributed the various social roles of boys and girls is detrimental to the girl child as it does not enable her have enough time to concentrate on her academic work. It is however surprisingly that men still questions the capacity of women in technical education positions. This is based on the fact that the society is patriarchal thus hindering or disfavoring any attempt even unconsciously to foster females education. According to social role theory, men are expected to assume roles that demand agency and dominance, whereas women are expected to assume roles that demand cooperation and submissiveness. When women violate these social roles, they are more likely to be the targets of disciplines. This is an element of social injustice mated on the girl folks.

On the other hand, girl students themselves want grace because they are warned by their parents that "*if you fail, you will be immediately dropped from the school*" or "you will be married off". Such situation gave a fillip to grace seeking and grace giving culture. This "grace culture" left many girl students weak at their base and, hence, they could not fare well in education, especially in Science and Mathematics in higher grades. They rather paid less attention to these subjects as they demanded hard work and sound educational base.

The result of the findings indicated that parental influence has a significant effect on adolescent's career choice, and that perceptions of parental occupational satisfaction will have effect on career aspirations of adolescents based on the following intervening variables such as sex, and culture. These findings are at match with Dobbins (2000) when he asserted that parents' career aspirations aid children in selecting occupational goals, influence their knowledge of occupations, and familiarize them with occupational roles and requirements. Whether the child internalizes those aspirations is greatly determined by numerous values found within the home. The findings are also in consonance with some people's opinion as cited by Friesen (1981) that the individual does not exercise career choice, but that the social and economic environment

determines the vocational choices that are made. Others argue that the individual does exert a choice and that a person may make a wise and fulfilling career choice or an unsatisfying choice.

However, the findings also revealed that; parental influence will have negative effect on adolescent's career choice; there is significant effect of parental influence on adolescents career choice; and that parental attitude to work will have significant effect on adolescents' career choice based on societal values and expectation. These results agree with sociologists view that the range of occupations that an individual will consider in choosing a career is determined largely by the status expectations of the social class to which he belongs (Friesen, 1981).

The implications of the sociologists' view for counseling according to Friesen is that the vocational choices people make are related to their social class, and the social origins of an individual limit the range of occupational opportunities available to the person. Students who come from poor homes often find it difficult to continue their education while those from rich homes obtain much encouragement from their families and peers to continue their studies. The findings also agree with McNair and Rusch, (1987) that parents are influential in the career development process, and they often wish to be included, yet, a specific role for parents is often not defined. In a situation where parental influence interferes with the career choice of adolescents, a career crisis may develop when there is a mismatch in terms of the ego strength of the child and the environmental pressures that challenge their identity. The adolescents straddle the line between childhood obedience and adult independence. But in most Africa communities, females are bound to be submissive to the patriarchal authority which does not work in their favour.

On this subject, Egun and Tibi (2010) concluded that equality of access to attainment of educational qualification is necessary if more females are to become agents of change. To bring about a meaningful change in the ratio of male/female enrolment and sustenance in school especially in the vocational and technical subjects, gradual but consistent strategies need to be evolved.

5.2.4. Implications of findings

The results of these findings have implications for the government and other policy makers interested in the field of education. If the government wants to bridge the gap between males and females as far as access to industrial technical education is concerned, she should be able to manipulate the variables that hinder access to technical industrial education for girls. They are social stereotypes, parental attitudes, sociocultural practices that society is promoting. The government can use sensitization strategies through the various ministries involved with

education. They are; the Ministry of Basic Education, Secondary Education, Higher Education, Youth and Sports, Vocational Training and Employment, Scientific Research and Innovation, the ministry of culture and Medium and Small Size Enterprises. Open Door Days and other scientific expositions are important in this drive.

5.3. Recommendations

The suggested recommendations target persons and institutions directly concerned with female access to education. The stake holders include; government, teachers, parents, female students and the community.

Government

- Through policies government can affect a lot of changes in technical education. Like in most West African states, the Cameroon government can implement the policy that all students must study at least one technical or vocational trade in secondary grammar school.
- The state should diversify curricula in sciences, mathematics and engineering to ease female entry by reflecting on their need.
- The government should increase access to technical schools by creating and equipping these schools and also providing inputs to better skill acquisitions.
- The government should increase the number of female teachers in technical industrial education who will act as role models. This will erode the fear of career uncertainty in both parents and female students.
- The government should institute legal support that would protect women in industrial workplace and ensure their advancement.
- The government should make the curriculum of the primary school relevant to our society by involving effective skill training. This will help build the notion of skill training early in the children.
- The government should open scholarship and bursaries schemes for female students who offer technical industrial trades.

Teachers

- The teachers themselves constitute a principal motivation to students. Their teaching methods should be geared towards professionalization. Male teachers should be more tolerant to girls. They should promote gender inclusive teaching strategies so as to avoid female drop out.
- The counseling department should provide information to parents and orient them on sellable options of technical education.
- Project teaching will build confidence in girls when they work together with boys

Parents

- Parents should adapt a philosophy that valorizes female and their contributions. They should denounce cultural aspect that oppresses women in general and provide equal status for boys as well as girls in matters of education.
- Parents should not give out their daughter for marriage or domestic work helpers when their academic programs are not through. Marriage should not be presented as a best option to education.
- Parents should equitably share domestic chores to their male and female children alike. This will provide them equal chances for schooling and wipe out the notion of a superior sex.
- Parents should open free communication between them and their daughters. This will build confidence in especially girls to express themselves of any want or need.
- Finally, Parents should allow the responsibility of choosing a program of study to be determine by the child or/and to experts such as school counselors.

Students

- Female students especially should disseminate themselves from certain presumptions. They should be able to identify their interest and per sue it. Their determination to assume right attitude will challenge stereotype against them.
- Female students offering non-traditional options should rather create associations that will serve as a social link to other similar associations so as to reap the benefits in social networking and overcome negative peer influence.

Community

- The community should change the wrong perception they have about technical education. They should valorize skill training by sending some of their children to technical schools.
- Men especially should develop a more tolerant attitude towards women in non-traditional options. They should shun at repressive tendencies that will discourage women both in the learning and work place environment.
- Unemployed adults should enter into skill training. This will increase skill labour and expand the acceptance of this type education in the cycle of the younger generation. The phenomenon of everyone trying to engage in petty trading kill creative skills.
- Local councils should run tool stores or centers where students can rent tools. This will help most poor parents who cannot afford to buy.
- Non-Governmental Organizations and Civil Societies should engage in activities that promotes gender equality. For example the Mbatu Women Convention (MBAWECO) in the North West region is sponsoring 21 less privileged but intelligent girls in government technical colleges and polytechnics. Also the female staff social (LADIES) of GTHS Bamenda gives financial assistance of 20,000frs yearly to girls offering industrial trades.

GENERAL CONCLUSION

This chapter has dealt with the discussion of the research findings. The three research hypotheses were all confirmed in the preceding chapter based on the results of our statistical analyses and discussion of the result in relation to the research hypotheses were equally provided in this chapter.

Female access to technical and industrial education is a subject which has attracted academic, professional as well as public attention, due to its multifaceted nature and its importance in the society. Since female education has been a real concern for a number of years by governments, international organizations and NGOs around the world, it yields well to analysis from diverse perspectives ranging from professional aspirations, social representation, and personal background and sociocultural factors.

The main objective of this study was to find out whether sociocultural factors significantly influence female access to technical and industrial education in Mezam division. Three specific hypotheses were derived from the general hypothesis. 308 girls' students from three technical high schools in Mezam division were used as the sample population. The opinion of those who constituted the sample was sought through a questionnaire and interview guide. These data were analyzed in relation to the research hypotheses. The data collected was analyzed using ANOVA test, T-test, Pearson correlation test and multiple regressions and content ananlysis for the interview data. In the process of data analysis, results revealed that social stereotypes, parental attitudes and sociocultural practices significantly correlate with female access to technical and industrial education. Yet the gap between girls of boys in their enrolment in technical education makes it difficult to achieve the equality our educational system is striving for. It is therefore the needs of the educational system to help girls prioritize the choice of technical education to acquire skills that would help them to contribute in the development the nation.

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ANNEXES

Questionnaire

QUESTIONNAIRE TO GIRLS' STUDENTS

Dear Respondents,

I am a master's student of the department of Sciences of Education (Educational Administration) of the University of Yaoundé I, I am currently undertaking a research for a Masters of Education degree. Though the primary purpose of the research is to meet the requirements of the above degree, it is expected that its results will go a long way in enhancing career choice in our schools. Your sincere and honest response will be greatly appreciated and used only for the purpose of the research and will be treated with all confidentiality.

Many thanks for your sincere cooperation.

Yours sincerely
Halleson Mary Mesame

I. DEMOGRAPHIC INFORMATION	
1.	***Name of School:***
2.	***What your class level? ……..***
3.	***Your age***? ☐ 1. Under 15 years ☐ 2. 15 – 18 years. ☐ 3. Above 18 years
4.	***Parents level of education***. ☐ 1. Primary ☐ 2. Secondary ☐ 3. University ☐ 4. Other
5.	***Parents' occupation ……..***
6.	***Your Region ……***
7.	***Your Religion ……..***

Instructions : For sections II, III, IV and V - Please read each statement and tick the box which most closely matches your opinion on a scal : (SD) Strongly Disagree, (D) Disagree, (N) Neutral, (A) Agree, (SA) Strongly Agree ,

II. SOCIAL STEREOTYPES						
		SD	***D***	***N***	***A***	***SA***
8.	***Girls/women are considered as the weaker sex***					
9.	***Technical training is too difficult for girls***					
10.	***There are jobs meant for men and women in your community***					
11.	***It is ridiculous when females do the so called 'males jobs'***					
12.	***Males should share in household tasks such as cooking, washing dishes and so on***					
13.	***Technical industrial professions for females often disturb marriage and child bearing***					
14.	***Girls/women should be given equal opportunity with men for apprenticeship in technical industrial trades***					
15.	***Girls have the same potential as boys to offer technical subjects***					
(SD) Strongly Disagree, (D) Disagree, (N) Neutral, (A) Agree, (SA) Strongly Agree						

III. PARENTAL ATTITUDES						
		SD	***D***	***N***	***A***	***SA***
16.	***Girls are weak and should be allowed to do industrial technical education***					
17.	***Parents make decision on the type of course to be offered by their daughters***					
18.	***Girls receive support from their parents on any course they want to offer in school***					
19.	***Parents give preference in meeting the needs of male children than their female counterpart***					
20.	***Parents visit school to find out the welfare and performance of their daughters***					
21.	***Girls sometimes register absent in some lessons due to household chores***					
22.	***Parents considered technical fields can obstruct girl chances of getting married***					
23.	***Girls need to go to school as much as boys***					
24.	***Parents encourage their daughters to go for counseling on the choice of option to enroll in technical trades***					
(SD) Strongly Disagree, (D) Disagree, (N) Neutral, (A) Agree, (SA) Strongly Agree						

IV. SOCIOCULTURAL PRACTICES						
		SD	***D***	***N***	***A***	***SA***
25.	***There are cultural practices that discriminate against women in my tribe***					
26.	***Cultural practices in my tribe tampers on women rights in education***					
27.	***In my culture there are certain jobs that women cannot do***					
28.	***Male adults support females who offer technical trades***					
29.	***Women are meant for house work***					
(SD) Strongly Disagree, (D) Disagree, (N) Neutral, (A) Agree, (SA) Strongly Agree						

V. ACCESS TO TECHNICAL EDUCATION						
		SD	***D***	***N***	***A***	***SA***
26.	***You have the ability to pay for technical education***					
27.	***You want your daughter to offer industrial trades such electricity, building and construction, motor mechanics***					
28.	***You have phobia (fear) for industrial accidents***					
29.	***You fear your daughter may be the only member of their gender in a male dominated classroom***					
30.	***You like to have a female Engineer among your children***					
31.	***You like your daughter to pursue university education rather than consider skilled job***					
32.	***You view technical education to solve the problem of youth unemployment***					
33.	***You admire the system of evaluation in technical school***					
(SD) Strongly Disagree, (D) Disagree, (N) Neutral, (A) Agree, (SA) Strongly Agree						

Thanks for your kind collaboration

Interview guide

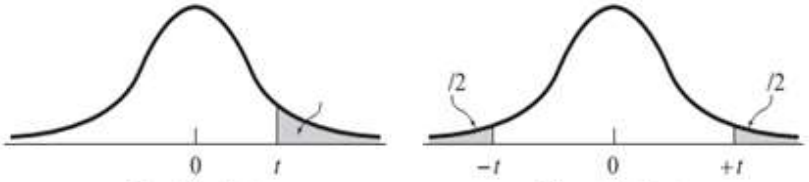
1) What motivated you to offer technical industrial trade?
2) Do you and your parents see a bright future for you in your option?
3) What image or perception do you think people have about you in a male dominated trade?
4) Sexually harassment is likely in a male dominated class, are the boys and male teachers a trouble in this regard?
5) What attitude do your teachers have towards you
6) Does the content of the curriculum provide enough opportunity to acquire necessary knowledge and skills that meets your aspiration?
7) How often are you expose to industrial experience? Does learning takes place only in school?
8) How do you plan to cope with the physical requirement of a technical job?

Determining the size of a random sample (s) for a given population size (N)

N	S	N	S	N	S
10	10	220	140	1,200	291
15	14	230	144	1,300	297
20	19	240	148	1,400	302
25	24	250	152	1,500	306
30	28	260	155	1,600	310
35	32	270	159	1,700	313
40	36	280	162	1,800	317
45	40	290	165	1,900	320
50	44	300	169	2,000	322
55	48	320	175	2,200	327
60	52	340	181	2,400	331
65	56	360	186	2,600	335
70	59	380	191	2,800	338
75	63	400	196	3,000	341
80	66	420	201	3,500	346
85	70	440	205	4,000	351
90	73	460	210	4,500	354
95	76	480	214	5,000	357
100	80	500	217	6,000	361
110	86	550	226	7,000	364
120	92	600	234	8,000	367
130	97	650	242	9,000	368
140	103	700	248	10,000	370
150	108	750	254	15,000	375
160	113	800	260	20,000	377
170	118	850	265	30,000	379
180	123	900	269	40,000	380
190	127	950	274	50,000	381
200	132	1,000	278	75,000	382
210	136	1,100	285	100,0000	384

Note: From R.V. Krejcie and D. W. Morgan (1970), Determining sample size for research activities, Educational and psychological measurement, 30, 608, Sage Publications.

Appendix *t*: Percentage Points of the *t* Distribution



One-tailed test　　Two-tailed test

	Level of Significance for One-Tailed Test								
	0.25	*0.20*	*0.15*	*0.10*	*0.05*	*0.025*	*0.01*	*0.005*	*0.0005*
	Level of Significance for Two-Tailed Test								
df	*0.50*	*0.40*	*0.30*	*0.20*	*0.10*	*0.05*	*0.02*	*0.01*	*0.001*
1	1.000	1.376	1.963	3.078	6.314	12.706	31.821	63.657	636.620
2	0.816	1.061	1.386	1.886	2.920	4.303	6.965	9.925	31.599
3	0.765	0.978	1.250	1.638	2.353	3.182	4.541	5.841	12.924
4	0.741	0.941	1.190	1.533	2.132	2.776	3.747	4.604	8.610
5	0.727	0.920	1.156	1.476	2.015	2.571	3.365	4.032	6.869
6	0.718	0.906	1.134	1.440	1.943	2.447	3.143	3.707	5.959
7	0.711	0.896	1.119	1.415	1.895	2.365	2.998	3.499	5.408
8	0.706	0.889	1.108	1.397	1.860	2.306	2.896	3.355	5.041
9	0.703	0.883	1.100	1.383	1.833	2.262	2.821	3.250	4.781
10	0.700	0.879	1.093	1.372	1.812	2.228	2.764	3.169	4.587
11	0.697	0.876	1.088	1.363	1.796	2.201	2.718	3.106	4.437
12	0.695	0.873	1.083	1.356	1.782	2.179	2.681	3.055	4.318
13	0.694	0.870	1.079	1.350	1.771	2.160	2.650	3.012	4.221
14	0.692	0.868	1.076	1.345	1.761	2.145	2.624	2.977	4.140
15	0.691	0.866	1.074	1.341	1.753	2.131	2.602	2.947	4.073
16	0.690	0.865	1.071	1.337	1.746	2.120	2.583	2.921	4.015
17	0.689	0.863	1.069	1.333	1.740	2.110	2.567	2.898	3.965
18	0.688	0.862	1.067	1.330	1.734	2.101	2.552	2.878	3.922
19	0.688	0.861	1.066	1.328	1.729	2.093	2.539	2.861	3.883
20	0.687	0.860	1.064	1.325	1.725	2.086	2.528	2.845	3.850
21	0.686	0.859	1.063	1.323	1.721	2.080	2.518	2.831	3.819
22	0.686	0.858	1.061	1.321	1.717	2.074	2.508	2.819	3.792
23	0.685	0.858	1.060	1.319	1.714	2.069	2.500	2.807	3.768
24	0.685	0.857	1.059	1.318	1.711	2.064	2.492	2.797	3.745
25	0.684	0.856	1.058	1.316	1.708	2.060	2.485	2.787	3.725
26	0.684	0.856	1.058	1.315	1.706	2.056	2.479	2.779	3.707
27	0.684	0.855	1.057	1.314	1.703	2.052	2.473	2.771	3.690
28	0.683	0.855	1.056	1.313	1.701	2.048	2.467	2.763	3.674
29	0.683	0.854	1.055	1.311	1.699	2.045	2.462	2.756	3.659
30	0.683	0.854	1.055	1.310	1.697	2.042	2.457	2.750	3.646
40	0.681	0.851	1.050	1.303	1.684	2.021	2.423	2.704	3.551
50	0.679	0.849	1.047	1.299	1.676	2.009	2.403	2.678	3.496
100	0.677	0.845	1.042	1.290	1.660	1.984	2.364	2.626	3.390
∞	0.674	0.842	1.036	1.282	1.645	1.960	2.326	2.576	3.291

Source: The entries in this table were computed by the author.

Appendix *F*: Critical Values of the *F* Distribution

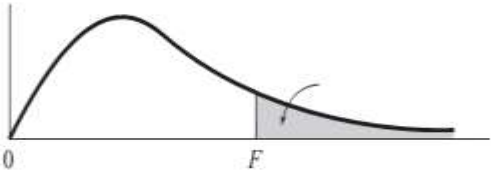


Table 1 $\alpha = 0.05$

Degrees of Freedom for Denominator	Degrees of Freedom for Numerator															
	1	2	3	4	5	6	7	8	9	10	15	20	25	30	40	50
1	161.4	199.5	215.8	224.8	230.0	233.8	236.5	238.6	240.1	242.1	245.2	248.4	248.9	250.5	250.8	252.6
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38	19.40	19.43	19.44	19.46	19.47	19.48	19.48
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81	8.79	8.70	8.66	8.63	8.62	8.59	8.58
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.86	5.80	5.77	5.75	5.72	5.70
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.62	4.56	4.52	4.50	4.46	4.44
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	3.94	3.87	3.83	3.81	3.77	3.75
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.51	3.44	3.40	3.38	3.34	3.32
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.22	3.15	3.11	3.08	3.04	3.02
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.01	2.94	2.89	2.86	2.83	2.80
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.85	2.77	2.73	2.70	2.66	2.64
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.72	2.65	2.60	2.57	2.53	2.51
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.62	2.54	2.50	2.47	2.43	2.40
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.53	2.46	2.41	2.38	2.34	2.31
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.46	2.39	2.34	2.31	2.27	2.24
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.40	2.33	2.28	2.25	2.20	2.18
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.35	2.28	2.23	2.19	2.15	2.12
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.31	2.23	2.18	2.15	2.10	2.08
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.27	2.19	2.14	2.11	2.06	2.04
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.23	2.16	2.11	2.07	2.03	2.00
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.20	2.12	2.07	2.04	1.99	1.97
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.15	2.07	2.02	1.98	1.94	1.91
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.11	2.03	1.97	1.94	1.89	1.86
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.07	1.99	1.94	1.90	1.85	1.82
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24	2.19	2.04	1.96	1.91	1.87	1.82	1.79
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.01	1.93	1.88	1.84	1.79	1.76
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	1.92	1.84	1.78	1.74	1.69	1.66
50	4.03	3.18	2.79	2.56	2.40	2.29	2.20	2.13	2.07	2.03	1.87	1.78	1.73	1.69	1.63	1.60
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.84	1.75	1.69	1.65	1.59	1.56
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	1.75	1.66	1.60	1.55	1.50	1.46
200	3.89	3.04	2.65	2.42	2.26	2.14	2.06	1.98	1.93	1.88	1.72	1.62	1.56	1.52	1.46	1.41
500	3.86	3.01	2.62	2.39	2.23	2.12	2.03	1.96	1.90	1.85	1.69	1.59	1.53	1.48	1.42	1.38
1000	3.85	3.01	2.61	2.38	2.22	2.11	2.02	1.95	1.89	1.84	1.68	1.58	1.52	1.47	1.41	1.36

Source: The entries in this table were computed by the author.

Table V

Loi du r de Bravais-Pearson (Probabilités bilatérales)

ddl \ Seuil	0.20	0.10	0.05	0.02	0.01	0.001	0.0001	0.00001
1	0.9512	0.9878	0.9971	0.9997	1.0000	1.0000	1.0000	1.0000
2	0.8002	0.9002	0.9502	0.9802	0.9902	0.9992	1.0000	1.0000
3	0.6872	0.8055	0.8785	0.9345	0.9589	0.9913	0.9982	0.9997
4	0.6085	0.7294	0.8116	0.8823	0.9173	0.9742	0.9920	0.9976
5	0.5510	0.6696	0.7546	0.8330	0.8747	0.9510	0.9807	0.9924
6	0.5069	0.6216	0.7069	0.7889	0.8345	0.9251	0.9657	0.9842
7	0.4717	0.5824	0.6665	0.7499	0.7978	0.8984	0.9482	0.9734
8	0.4429	0.5495	0.6320	0.7156	0.7647	0.8723	0.9295	0.9608
9	0.4188	0.5216	0.6022	0.6852	0.7349	0.8472	0.9104	0.9470
10	0.3982	0.4974	0.5761	0.6582	0.7080	0.8235	0.8913	0.9324
11	0.3804	0.4763	0.5531	0.6340	0.6837	0.8011	0.8726	0.9176
12	0.3647	0.4577	0.5326	0.6122	0.6615	0.7801	0.8545	0.9027
13	0.3508	0.4410	0.5141	0.5924	0.6413	0.7605	0.8370	0.8879
14	0.3384	0.4261	0.4975	0.5744	0.6227	0.7421	0.8203	0.8734
15	0.3273	0.4125	0.4823	0.5579	0.6057	0.7248	0.8043	0.8593
16	0.3171	0.4002	0.4684	0.5427	0.5899	0.7086	0.7890	0.8455
17	0.3079	0.3889	0.4557	0.5287	0.5752	0.6933	0.7744	0.8322
18	0.2994	0.3785	0.4439	0.5157	0.5616	0.6789	0.7604	0.8193
19	0.2915	0.3689	0.4330	0.5035	0.5489	0.6654	0.7471	0.8068
20	0.2843	0.3600	0.4229	0.4922	0.5369	0.6525	0.7344	0.7948
21	0.2776	0.3517	0.4134	0.4817	0.5258	0.6404	0.7223	0.7832
22	0.2713	0.3439	0.4045	0.4717	0.5153	0.6289	0.7107	0.7720
23	0.2654	0.3367	0.3962	0.4624	0.5053	0.6179	0.6996	0.7612
24	0.2599	0.3299	0.3884	0.4536	0.4960	0.6075	0.6889	0.7508
25	0.2547	0.3234	0.3810	0.4452	0.4871	0.5976	0.6787	0.7408
26	0.2499	0.3174	0.3740	0.4373	0.4787	0.5881	0.6689	0.7311
27	0.2453	0.3116	0.3674	0.4298	0.4707	0.5791	0.6596	0.7217
28	0.2409	0.3062	0.3612	0.4227	0.4630	0.5705	0.6505	0.7127
29	0.2368	0.3010	0.3552	0.4159	0.4558	0.5622	0.6418	0.7040
30	0.2328	0.2961	0.3495	0.4095	0.4488	0.5543	0.6335	0.6955
31	0.2291	0.2915	0.3441	0.4033	0.4422	0.5467	0.6254	0.6874
32	0.2255	0.2870	0.3389	0.3974	0.4359	0.5394	0.6177	0.6795
33	0.2221	0.2827	0.3340	0.3917	0.4298	0.5323	0.6102	0.6718
34	0.2189	0.2787	0.3293	0.3863	0.4240	0.5256	0.6029	0.6644
35	0.2157	0.2748	0.3247	0.3811	0.4184	0.5190	0.5960	0.6572
36	0.2128	0.2710	0.3204	0.3761	0.4130	0.5128	0.5892	0.6502
37	0.2099	0.2674	0.3162	0.3713	0.4078	0.5067	0.5827	0.6435
38	0.2071	0.2640	0.3122	0.3667	0.4028	0.5009	0.5763	0.6369
39	0.2045	0.2606	0.3083	0.3622	0.3980	0.4952	0.5702	0.6306
40	0.2019	0.2574	0.3045	0.3579	0.3933	0.4897	0.5642	0.6244
50	0.1808	0.2308	0.2734	0.3219	0.3543	0.4434	0.5134	0.5708
60	0.1651	0.2110	0.2502	0.2950	0.3250	0.4080	0.4740	0.5289
70	0.1530	0.1955	0.2320	0.2738	0.3019	0.3799	0.4425	0.4949
80	0.1431	0.1831	0.2173	0.2567	0.2831	0.3570	0.4165	0.4666
90	0.1350	0.1727	0.2051	0.2424	0.2674	0.3377	0.3946	0.4427
100	0.1281	0.1639	0.1948	0.2302	0.2541	0.3212	0.3758	0.4221
200	0.0907	0.1162	0.1382	0.1637	0.1810	0.2300	0.2705	0.3054
300	0.0741	0.0950	0.1130	0.1340	0.1482	0.1886	0.2222	0.2513
400	0.0642	0.0823	0.0980	0.1161	0.1285	0.1637	0.1930	0.2185
500	0.0574	0.0736	0.0877	0.1040	0.1150	0.1466	0.1729	0.1959
1000	0.0407	0.0521	0.0621	0.0736	0.0815	0.1040	0.1227	0.1392