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SKILL-BASED COMPETENCE AND COMPETITIVENESS IN THE GARMENT-MANUFACTURING FIRMS OF GHANA.

WILLIAM KWESI SENAYAH

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

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SKILL-BASED COMPETENCE AND COMPETITIVENESS IN THE GARMENT-MANUFACTURING FIRMS OF GHANA.

THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF DOCTOR OF PHILOSOPHY DEGREE IN FAMILY AND CONSUMER SCIENCES.

BY

WILLIAM KWESI SENAYAH
(10255848)

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

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DECLARATION

I, Senayah Kwesi William, do hereby declare that this thesis is my original research work conducted at the Department of Family and Consumers Sciences, University of Ghana. No part of this thesis has been presented for another degree elsewhere. References to the work of other researchers have been duly cited.

Senayah Kwesi William (PhD. Candidate)

Sign. …….

Date……

Dr. Mercy Kuma – Kpobee (Chief Supervisor)

Sign. …….

Date …….

Dr. Efua Vandyck (Supervisor)

Sign. ……

Date……

Dr. Sheriffa Mahama (Supervisor)

Sign. ……

Date……..

ABSTRACT

This study examines the skills competence of workers in the garment firms and skills-based competitiveness of the garment industries of Ghana. A total of 34 garment firms made up of 27 firms registered with the Association of Ghana Industries and seven firms registered with the Ghana Free Zones Board, as well as 205 workers of the garment industries were selected for the study. The Explanatory Sequential Mixed Method Approach was used for the study in which the quantitative process was first used, followed by the quantitative process. Data were gathered using questionnaires and followed by interviews of some selected workers and management of garment firms. The quantitative data was analysed using Pearson Product-Moment Correlation and Simple Linear Regression while the interviews were analysed using Thematic Analysis. The results show that the garment firms in Ghana have high levels of skills gaps and shortages in critical skills areas of garment production, such as in computer-aided design, machine repairs, and quality assurance, among others. As a result of the skills gaps and shortages many of the garment firms are operating at a competitive disadvantage. Therefore, it is recommended that the garment firms should collaborate with academic and training institutions to increase the skills capacity of garment workers. Garment firms should also adopt competitive manufacturing strategies such as the use of technology, low-cost and added-value manufacturing among others to increase competitiveness. Finally, the Department of Labour should conduct periodic labour skills analysis so that up-to-date information about labour competencies, challenges and opportunities are known to academics, policy makers and industrial who depend on such information for human resource planning. The labour analysis can be done through some sort of liaison with COTVET and AGI as partners.

DEDICATION

This work is dedicated to the glory of God for His mercies and guidance, which enabled me to successfully complete this work. To Him, I should be forever grateful.

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LIST OF ABBREVIATIONS

AFDB: African Development Bank

AGI: Association of Ghana Industries

ATL: Akosombo Textiles Limited

GNA: Ghana News Agency

GTP: Ghana Textiles Print, currently Tex Style

GFZ: Ghana Free Zones

GSS: Ghana Statistical Service

GTMC: Ghana Textiles Manufacturing Company

ILO: International Labour Organisation

SDF: Skills Development Fund

SETA: South African Education and Training Authority

SWOT: Strength, Weakness, Opportunities and Threats

JICA: Japan International Cooperation Agency

ERG: Existence, Relatedness, and Growth

MOTI: Ministry of Trade and Industry

NVTI: National Vocational Training Institute

NAICS: North American Industrial Classification Systems

ESS: Employee Skills Survey

UNDP: United Nations Development Program

QRM: Quality Assurance Manufacturing

USITC: United States International

YEN: Youth Employment Network

CHAPTER ONE

INTRODUCTION

1.0 Background of the study

Ghana's manufacturing sector, like that in most developing countries, is dominated by firms in garment manufacturing. According to official government statistics, more people are engaged in the garment industry than in any other sector of manufacturing companies (Japan International Cooperation Agency 2008, Ghana Statistical Service, 2016). Specifically, over 242,000 people are engaged in the industry because four out of every five females that choose vocational education opt for training in garment manufacturing (Ghana Statistical Service, 2016). The majority of these firms, however, are micro or small enterprises with low capitalization and operate mostly in the informal sector with standard equipment. Such enterprises unable to compete globally (Quartey, 2006).

In 2001, the government initiated a major step towards industrialisation of the sector to make the industry competitive, increase employment, earn more foreign exchange and achieve high-value addition to the overall economy. This was through the Presidential Special Initiative (PSI) (Ghana News Agency (GNA), 2001). In spite of that step, the industry to a large extent is currently decoupled from the global production process due to the collapse of the PSI (JICA, 2008). Some firms still cater for domestic and worldwide production at a relatively small scale, but none of them can be said to be linked to the global production value chain (which was the original aim of the PSIs).

Some reasons were put forward to explain the inability of the garment sector to industrialize. These include the effect of import of second-hand clothes (JICA, 2008; Rodgers 2016), low-added value of garment manufacturing (Ghana Statistical Service,

2013), low skills (Hinshaw, 2012; Attenkah, 2008), and others such as gross under capitalization, unstable government policies, high operating cost and difficulty in accessing financial assistance from banks and other financial institutions (Quartey, 2006; Aryeteey, 2008). Thus, undoubtedly, the garment industry in Ghana is still faced with these challenges at the time when the global level of garment production is very competitive.

Despite the challenges, about 40% of all firms in the manufacturing sector of Ghana, according to the Ghana Statistical Service (2016), are garment firms, and these firms must possess the capacity to produce and compete nationally and globally because the garment industry is highly competitive (Cao, Berkeley, & Finlay, 2014). Admittedly, while there must be ways to solve or address the challenges in the garment sector, it is also important to focus on the skills which the current firms possess and determine their ability to compete both nationally and globally. This is because the garment manufacturing industry is highly labour intensive. With increasing globalization and a volatile production process, manufacturing firms with the support of their home countries rely on skills competency as a competitive advantage (Partnership for 21st Century Skills, 2008; International Labour Organization, 2014 and U.S. Council on Competitiveness, 2016). Investment in skills involving labour that must be abundant and moderately priced, therefore, is seen as a necessity for firms to respond to changing production systems that require mass products within the shortest possible time (Bernstein & Johnson, 2007; Daniels, 2007; Morris & Reed, 2008).

To compete globally, the garment-manufacturing firms in Ghana must invest in skills competitiveness to bid for international contracts. However, this can be done only after a comprehensive analysis that identifies and explores the dynamism of skills demand,

gaps, shortages and supply supported by policies that ensure opportunities for skills training, retraining and upgrading to guarantee skills-led competitiveness. Unfortunately, there is an empirical gap of both literature and evidence on skills levels in the various occupational categories in the garment sector of Ghana, beyond anecdotes. There are, however, a few publications that have discussed the labour market of Ghana and have mainly provided anecdotal evidence on the nature of skills levels in the job market (Boateng & Ofori-Sarpong, 2002; Baah-Boateng & Baffour-Awuah, 2015 & Hinshaw, 2012). None of these publications have focused specifically on the garment sector nor provided specific evidence of skills levels of the various occupational categories in the sector, hence, there is an absence of empirical knowledge on skills levels and its effect on the competitiveness of the garment sector.

The garment industry of Ghana was a major component of the manufacturing sector of the country. In the past, it employed the highest number of people and had the largest number of establishments in the manufacturing industry of Ghana (GSS, 2003; GIPC, 2004; JICA, 2008). However, within the context of global garment production, the Ghanaian garment industry is largely delinked from the global value chain. This situation, according to some analysts, is mostly the result of numerous problems including second-hand imports, the lack of government support and low skills, among others, that plague the industry (Quartey, 2006; Aryeteey, 2008; Attenkah, 2008; Hinshaw, 2012). The situation appears to be so dire that now the industry is contributing only 3% added value to the national economy (GSS, 2003).

1.1 Statement of the problem

Garment firms in Ghana that are currently operating have to compete at both national and international levels where skills-led competitiveness is the prime driver of

competitive advantage. According to the Global Competitiveness Index (2016), high skills levels are perceived to be the topmost drivers of competitiveness in all manufacturing firms around the world. Unfortunately, there is limited literature on skills levels of the various occupational categories in the garment sector of Ghana. Empirical gaps exist on how the industry is competitive at the national, global and firm levels and the extent to which skills drive such competitiveness. This empirical gap, if unaddressed, has serious implication on the ability of Ghanaian businesses to compete in the global industry and generate economic and employment benefits, as expected and so the study sought to provide useful insights that address the gap.

This study, therefore, sought to analyse skills from two important perspectives: institutions that use the skills and individuals that possess the skills. At the institutional level, the study ascertained the extent to which skills levels affect businesses - be it through skills gaps or skills shortages and subsequent effect of these on competitiveness at national, global and firm levels using the Resource Based View theory (Barney, Wright, & Ketchen, 2001). Similarly, at the individual level, the study sought to ascertain if factors affecting workers, such as career-incongruences or job satisfaction, have any effects on skills shortages and thus create recruitment challenges for the garment firms, using Holland's Vocational Interest Theory (1997). Beyond filling the gaps in skills literature of the garment industry in Ghana, this study was to identify possible skills gaps and shortages in the garment-manufacturing sector, determine the relationship between skills levels and competitiveness, and competitive performance of the skills available in the garment industry.

1.2 Aim of the study

The aim of this study was to determine the competitive performance of garment manufacturing firms in Ghana based on the analysis of skills and job satisfaction of workers.

1.3 Specific objectives

The specific objectives of the study were to:

1. Examine skills gaps and shortages in the garment firms of Ghana (if any)
2. Determine the level of skills-based competence in the garment firms of Ghana
3. Establish the level of firm competitiveness in the garment sector
4. Examine the relationship between workers' Career-interest Congruence and job satisfaction, and skills shortage in the garment firms
5. Determine the competitive levels of skills towards national and global skills competitiveness
6. Analyse skills-based competitiveness in the garment firms

1.4 Significance of the study

It was anticipated that the study would:

1. Provide information on skills levels in the garment manufacturing industry of Ghana for skills providers/financiers such the Skills Development Fund, the Labour Dept. of Ghana and other employers to plan and implement education and training provisions related to skills gaps and shortages.
2. Inform academic and non-academic training institutions such as Technical Universities, Universities, and the Gratis Foundation, among others, on skills gaps and shortages that exist in the garment industry so that they can mount programmes to address them or train prospective workers.

3. Determine skills competence and skill based competitive advantage of Ghanaian garment manufacturing firms so that the information can be used by the Ghana Investment Promotion Centre (GIPC) in promoting garment manufacturing of Ghana.
4. Document and highlight for policy consideration, the career interests and satisfaction levels of workers and how workers' satisfaction affect productivity by creating shortages of qualified personnel in the garment sector.

1.5 Definition of terms

Skills:

Ordinarily, most people understand the concept of skills to mean the ability to do something or the capacity to carry out a task or sets of tasks. However, according to Green (2011), in the academic study of skills, the term skills can have different concepts for Economists, Sociologists, and Psychologist, among others. For example, although Economists and Psychologists equate skills to 'competence', A Psychologist's primary interest lies in the generation and function of the components of the 'competence' while Economists focus on measuring the market valuations of the said 'competence'. Therefore, to avoid ambiguity, this study adopts the definition of skills put forth by Cowan (1997) which defines skills as a measure of the amount of a worker's expertise, specialization, wages and supervisory capacity.

Related to the meaning of skills, are concepts, which as explained by Green (2011), can also be as confusing as the concept of skills itself. Therefore, some of the skills concepts used in the study are explained as follows:

i. **Skill Gaps** refers to a situation when a labour force has a lower level of skill than is necessary to meet business objectives (Pye, 2004). Skills gaps are analogous to critical skills as explained by Morris & Reed, (2008)

ii. **Skill Shortages:** this refers to the lack of adequately skilled and or qualified individuals accessible in the available labour market (Pye, 2004).Skills shortages are also analogous to Scarce skills, as explained by Morris & Reed, (2008)

iii. **Generic Skills:** refers to skills that are commensurate across a wide range of (although not necessarily) occupations.

iv. **Job Specific Skills:** refers to skills that are technical to a particular job, based on education, training or experience.

v. **Occupational Skills Category** refers to the job title in which the job description requires a particular set of skills acquired through training or experience.

1.6 Structure and organisation of the study

This thesis is organized in six chapters. The first chapter (Chapter One) provides a brief background and justification of the study. It includes a listing of terminologies and their meanings, as used in this study. Chapter Two explores pertinent Ghanaian and international literature that is relevant to the variables and objectives of this study to help provide the context to the study and interpret findings. In Chapter Three, the philosophical underpinnings, the research design and the general methodology for the study are discussed. Chapter Four is the results and discussion section of the study where all the quantitative and qualitative results are presented and discussed. Finally, in Chapter Five, the conclusion, limitations and recommendations of the study are presented.

CHAPTER TWO

LITERATURE REVIEW

2.0 A brief background of the garment manufacturing industry

To provide the context within which skills gaps and shortages exist, it is important to discuss the nature of the garment manufacturing industry. The garment industry is a soft goods industry that forms part of the 'Textile Complex'. As explained by Dickerson (1999) and Kunz and Myrna, (2011), the textiles complex is a critical component of the soft goods industry, which encompasses the upstream firms made of fiber, and textile industries and downstream businesses also made up of end users and distribution (Refer to Appendix H).

Thus, the garment industry is an end-user industry from the perspective of the textile complex and made up of product development processes such as cutting, sewing, contracting and marketing. The garment industry can be seen as a sewn products industry which includes all stages of garment production, sewn interior furnishing products (draperies and linens), luggage, awnings, and sewn toys (Refer to Appendix H). According to the US Department of Labour (2016), the garment manufacturing industry worldwide is classified under the North America Industrial Classification System as NAICS 315. That classification is for the purpose of industrial trade, standards, and data collection.

The garment sector has three sub divisions within the NAICS, which are:

- Apparel Knitting Mills: NAICS 3151
- Cut and Sew Apparel Manufacturing: NAICS 3152
- Apparel accessories and other apparel manufacturing: NAICS 3159.

Within the context of the North America Industrial Classification System [NAICS], the garment industry is defined as:

> *"Firms in the Apparel Manufacturing subsector group establishments with two distinct manufacturing processes: (1) cut and sew (i.e., purchasing fabric and cutting and sewing to make a garment), and (2) the manufacture of garments in establishments that first knit fabric and then cut and sew the fabric into a garment. The Apparel Manufacturing subsector includes a diverse range of establishments manufacturing full lines of ready-to-wear apparel and custom apparel: apparel contractors, performing cutting or sewing operations on materials owned by others; jobbers performing entrepreneurial functions involved in apparel manufacture; and tailors, manufacturing custom garments for individual clients are all included. Knitting, when done alone, is classified in the Textile Mills subsector, but when knitting is combined with the production of complete garments, the activity is classified in Apparel Manufacturing."* (United States Department of Labour, 2016, Para. 1)

2.1.1 Steps in garment manufacturing (Industrial Production Process)

Like all firms, the processes involved in actually manufacturing a garment or garments by industrial means differ from one manufacturer to the other and for each garment. A general overview of garment manufacturing processes is identified and discussed (Table 2.1). The processes are discussed step by step under operations followed by a description of jobs undertaken and the method of production, whether manually or computerized.

Table 2.1: Steps in the Garment Manufacturing Process

SN	Operation	Job description	Method
1	Design/Sketch	Production of working sketches of styles or design details with measurements	Manual/Computerized
2	Pattern Making	Production of various forms of pattern or drapes based on design/sketch, done in any size to enable sample garment to be made	Manual/Computerized
3	Sample Making	Sample of garment is produced based on specifications of buyers to analyze pattern fit and design and approved by buyer upon construction	Manual
4	Production Pattern	This involves bulk production of patterns taking into consideration direct sample, specification sheet/measurement chart, actual body size measurements, ease allowances and sewing allowances	Manual/Computerized
5	Grading	This process could be part of pattern production but performed at the request of a buyer where patterns are graded into different sizes such as S, M, L, XL or XXL	Manual/Computerized
6	Marker Making	Involves the process of determining fabric yardage for each style or garment.	Manual/Computerized
7	Spreading	Involves spreading fabric on the table for cutting. Fabric is often laid in piles for cutting and laid in such a way to avoid or prevent fabric wastage	Manual/Computerized
8	Cutting	Involves cutting fabrics based on marker dimensions	Manual/Computerized

Table 2.1: Steps in Garment Manufacturing Process Cont'd

SN	Operation	Job Description	Method
9	Sorting and Bundling	Involves the precision of sorting out cut fabrics according to sizes and grouping each size into a bundle	Manual/Computerized
10	Sewing or Assembly	Involves assembling garment parts based on bundles	Manual/Semi Automated
11	Inspecting	Involves inspecting all aspects of the manufacturing process based on quality specifications	Manual
12	Pressing and Finishing	Involves ironing, pressing creases or lines, molding with heat set equipment. Sometimes this process may be performed before inspection	Manual
13	Final Inspection	Involves final review of product based on quality standards set by buyer or regulation. Specific attention is paid to sewing defects, sizing defects and garment defects	Manual
14	Packaging	Involves sorting finished garments in packages based on design and size	Manual
15	Cartooning	Involves placing packaged articles into cartons based on the specifications of the buyer	Manual
16	Shipment/Dispatch	Involves sending the final products to buyer	Manual

Source: Kiron (2016)

2.1.2 Global production of garment

In terms of production, virtually every country in the world has at least a rudimentary garment industry to serve its domestic market, provide employment and earn foreign exchange. Historically, as noted by Dickerson (1999), production capabilities have shifted from countries and regions over the years. First, Japan became a top producer in the 1960s, out staging its North American and European counter- parts. Japan was followed by the Asian Big Three (Hong Kong, Taiwan, and Korea) that assumed dominance in the 1970s. Then in the 1980s, most South East Asian countries including Indonesia, Thailand, the Philippines, Malaysia, China and Sri Lanka became big players. In the 1990s, while South Asia and Latin America became important suppliers to the U.S, East Europe. The Mediterranean region also became top suppliers to the E.U.

However currently, according to UN Comtrade (2016) the highest trade surplus is occurring in Eastern Asia, South-Eastern Asia and South Asia regions where some of the countries in those regions, have the capacity to produce high volumes of apparel products at low-cost (See Appendix I). On the contrary, the developed North America, developed Europe and Asia-Pacific have the largest trade deficits although a few of the countries in the developed North America, Europe (such as Germany, Italy and the U.S) have large export capacity because of their superior skills and technology in special-purpose products that are generally high priced and high value-added Global average growth from 2010 to 2014 was 7.9% as compared to 4.2% between 2013 -2014. Again, data on global production shows that the top 15 countries accounted for 86.5% of production, which means that those countries combined, are dominant in the global trade. With regards to Ghana, because the export of garment products is very low, statistics on Ghana's garment exports are not captured in global trade data.

2.1.3 Importance of garment manufacturing to countries

Owing to the ability of the garment industry to generate huge employment, foreign exchange and spur industrialization, the importance of the garment-manufacturing sector to these countries cannot be underestimated, as noted by Cao, Berkeley, & Finlay, (2014). The textile and garment industry led the industrial revolution in Europe and stimulated the export-led growth in the newly industrialized economies of East Asia. Not long ago, the industry operated in independent sectors and markets, but currently, the industry is perhaps the most diverse of all commerce. Even before globalization, textile and apparel had always been essential to human existence, as one of the core needs of man. It was the first industry to take on a global dimension and the most widely dispersed industry in both developed and developing countries (U.S.I.T.C, 2008). According to Morris and Reed, (2008), the industry is the largest source of industrial employment in the world, both in the developed and the developing world. It is the only industry in which a large number of developing nations can participate in trade.

2.1.4 Recent advances in garment manufacturing

In recent times, a number of advances have occurred in the garment-manufacturing sector that has implications for competition, production processing, and labour. These advances are Global Sourcing, Quick Response Manufacturing (QRM) and labour involvement (Tyler, 2008).

2.1.4.1 Global sourcing

In the last several years, firms all over the world have faced increasing competition, not only from their domestic competitors but also from large scale global competitors who use low price as a competitive marketing strategy, by producing at a reduced cost and

selling at a lower price (Daniels, 2007; ILO, 2015). This has led to alternative ways of producing goods at lower prices as a different-marketing-technique and has become known as global sourcing (Porter, 1990; Rodgers, 2016). With continued interest, the term 'global sourcing' has evolved into different terminologies such as 'outsourcing', 'offshore business' and to some extent 'supply chain'. To date, the dynamics of global sourcing continue to remain complex and uncertain. Its unintended consequences may not be beneficial to all nations and firms alike. However, global sourcing has reached some degree of prominence where it cannot merely be wished away, but must be tackled (Handfield, 2006).

Depending on the understanding or perception of its practitioners, the term global sourcing encompasses different definitions and processes. Some authors define global sourcing by the processes involved, while others define it by its intended outcome: cost reduction. According to Cassill (2008) and Ha-Brookshire (2014), global sourcing is the procurement of *good*s and *services* for the completion of finished goods. Goods refer to all product components such as (fiber, yarn, trim, label, etc.) while services refer to all manufacturing, packaging, and logistics services needed to get the product to its intended destination. Similarly, Hira and Hira (2005) also define global sourcing as using sources that span multiple countries to develop a product or deliver a service. Sometimes, global sourcing includes forming strategic partnerships or moving production to another country for reasons beyond merely procuring goods and services (Ha-Brookshire, 2014).

Regardless of the definition, the importance of global sourcing to garment manufacturing firms can be enormous. According to Bozarth, Handfield and Das (1998), global sourcing is important for a number of reasons. Not all of which are

applicable to all firms, because factors such as a firm's sophistication and prior experience with global sourcing usually determine its motivation for seeking international suppliers. Some researchers including Kunz and Myrna (2011) and Cao, Berkeley, and Finlay (2014), among others, have noted that unit price reduction, although not necessarily cost reduction, is perhaps the single most prominent factor with regards to global sourcing.

Handfield (2006) identifies a number of motivations that also drive global sourcing. These are listed as follows:

- improve host company focus
- gain access to world class capabilities
- free internal resources for other purposes
- avoid a production function that is time- consuming to manage or out of control
- compensate when insufficient resources are available to produce internally and
- sometimes to share risks with partner companies
- access to quality product from more competent sources,
- access to new markets
- access to new technology
- shorter product development and life cycles
- easy access to raw materials
- competitive product pricing
- comparative advantage and ownership possibilities

2.1.4.2 Quick response manufacturing

Regardless of the machinery and labour, from which fashion is made, lately, the garment is expected to be produced with the concept of quick response. Quick response or Quick Response Manufacturing (QRM) refers to the short cycle by which orders are given for products to be supplied (QRM, 2009). According to the Centre for Quick Response Manufacturing (QRM, 2009) the main advantages of 'quick time responses'

helps companies to cut lead times in all phases of manufacturing and office operations, bringing products to the market more quickly, and increasing profitability by reducing non–value–added time, cutting inventory and increasing return on investment.

Applying QRM enables a firm to have a competitive edge. Firms such as Zara, H&M, among others, are known to use the QRM concept as a competitive advantage over their competitors (Vitzthum, 2017). To explain further, for example in a Wall Street Journal article about Zara – one of the world's most profitable clothes retailers, Vitzthum, (2017) reports that whereas it takes other clothes retailers about six months to design and manufacturer, Zara takes three weeks to design and one week to make the clothes. This means that the company is using its ability to quickly make clothes to beat their competitors by making products available first and on time.

2.1.4.3 Labour demands in the garment industry

Garment manufacturing is a process led by the need for skilled labour in dealing with a range of raw materials, product types, production technologies, production volumes, retail markets and brands (Tyler, 2008). Globally, the past decade has seen changes in the makeup of the garment industry. According to Pye (2004) and ILO (2015), large-scale domestic manufacturing, which predominated the manufacturing sector, is now focussed on niche markets using specialist skills, while the emerging manufacturing trend is focussed on core skills of design, product development, sourcing, logistics and supply chain management.

Despite the availability of technology in nearly all aspects of the textiles and some parts of garment manufacturing, the garment production process is largely labour intensive (ILO, 2014). According to Tyler (2008), machine manufacturers from the U.S, Japan and the EU have sought, since the 1980s, to enhance the abilities of automated machines

to operate sewing activities with the aim of increasing domestic production towards competitiveness. However, none of those efforts has been particularly fruitful. This is because the challenge of working with limp, deformable fabrics were enormous. Although automation of the sewing process was possible, the cost was prohibitive paving the way for labour dominance in the garment manufacturing process.

Even now, at the time when advances in automation have progressed, the nature and characteristics of different types of fabrics in the garment industry can still hinder automation of the garment production processes. This is because fabrics used in sewing operations are flexible, limp and bend in all directions; therefore, it is difficult to invest jigs and automatic equipment for performing such sewing operations compared to rigid materials (Tyler, 2008). Fabrics also vary extensively from grain to bias and sometimes from yarn to fabric. Owing to the varying levels of extensibility that might exist in using even the same fabric, the labour operated option rather than machines or automation is preferred in garment manufacture. Fabrics also vary in thickness. There are problems in sewing thin or thick fabrics and with even one thickness, the overall skill required to assemble parts involves complexities that a human worker will better understand and work with, compared to automated systems.

Thus, given the fact that no satisfactory general alternative to sewing exists, which could have reduced cost, garment firms now focus on reducing labour cost. Currently, the cost of labour constitutes a huge chunk of expenditure (IBIS World Inc., 2009). Hence, some garment manufacturing firms, particularly in developed countries, rely heavily on cheap labour from developing countries that manufacture mass products (USITC, 2004). In those developing countries, the cost of making a garment is about 50 to 90% lower than in the developed country (ILO, 2014). For instance, whereas it could

cost $20 to manufacture a garment in Netherlands, it could cost just about 50 US cents to produce the same item in places such as Bangladesh, Honduras or Vietnam. Labour, therefore, has become a very important factor in firm competitiveness because, when a garment manufacturing firm has a competent, adequate and reliable labour force with relevant skills available at low cost, it provides a competitive edge for that firm in a global production market place that is highly competitive and where opportunities for contracts are few with requirements that border on labour performance. This has therefore fuelled global sourcing.

Apart from the cost of labour, the level of skills of labour in the manufacturing industry is also very decisive in maintaining manufacturing jobs. In Europe and some developed countries, for example, as a result of high labour skills, some garment firms have been able to reposition labour towards niche, luxury, and exclusive brands. This has helped those garment manufacturing companies to stem the flow of job opportunities that were fast moving to developing countries as a result of cheap labour (ILO, 2014). For garment-manufacturing firms whose labour skills are low, production is often volatile and easily affected by changes in global trends. Thus, it behoves on countries and firms to understand that the need for skills adequacy, positioning and training are crucial, as noted by the International Labour Organization (2014).

2.2 Profile of the garment manufacturing industry of Ghana

Structure

The garment manufacturing industry in Ghana is a low concentrated area of business dominated by the informal sector (JICA 2008; Ghana Statistical Service 2016). A low concentrated area of business because entrance into the business is relatively easy requiring little or no capital with low skills (International Labour Organization, 2015).

Thus, to enter into garment manufacturing in Ghana, one merely requires a design flair, sewing skills towards a niche market and a small working capital to start a business. As a result of being a low concentrated area of business, the garment industry has more establishments in the manufacturing sector than any other industry in Ghana as shown in Table 2.2 (Ghana Investment Promotion Center, 2004; JICA, 2008).

Table 2.2: Composition of Establishment by Industry in the Manufacturing Sector

S/N	Industry	%
1	**Wearing apparel**	**40**
2	Furniture	20
3	Food products and beverages	15
4	All other industries	11
5	Fabricated metals product except machinery and equipment	7
6	Wood and wood products excluding furniture	4
7	Other non-metallic products	3

Source: Ghana Statistical Service (2003)

In addition to the dominant number of establishments in the manufacturing sector of Ghana's economy, the garment manufacturing industry also employs the most people in the industrial sector, accounting for 23% of employment in the manufacturing sector as at 2003. Specifically, 55301 people were employed in garment manufacturing as seen in (Table 2.3).

Table 2.3: Number of People Employed in the Different Manufacturing Sectors

S/N	Industry	%
1	**Wearing apparel**	**23**
2	Wood and wood products excluding furniture	14
3	Furniture	13
4	Food products and beverages	13
5	Fabricated metals product except machinery and equipment	8
6	Metal ore mining	5
7	Other non-metal products	3
8	Chemical and chemical products	3
9	Textiles	3
10	All other industries	17

Source: Ghana Statistical Service (2003)

Markets

According to a report by the JICA (2008), on Ghana, individual customers constitute the largest market for garment products, followed by sales to open-market vendors, private enterprises, government organizations, sales agents, supermarkets and sometimes manufacturer's outlets. Export of mass clothing to international markets are mostly limited to seven garment manufacturing firms with Free Zone Status that have the capacity to produce a large scale export-based full package or Cut-Make-Trim (CMT) garment products (Ghana Free Zones Board, 2017).

There is also the export of folklore articles to International markets like Kente, Fugu, Adinkra and wax prints to serve different purposes including garments, ornamentation, decoration, festivities or commemoration, among others. Folklore articles are often exported in small quantities, mostly by individual artisans or their agents. A review of the global statistics of imports and exports, using the UN Comtrade and UN Service trade, shows no current data on Ghana's export and import statistic or value of the trade (UN Comtrade and UN Services Trade, 2016). This is probably because the quantities of export and import activities are relatively small.

The garments produced for domestic consumption are predominantly staples (traditional and western styled clothes) where the influence of fast-fashion is minimal and there is a constant demand for such staples for funerals, church, daily wear or special occasions. Examples of such staples include Fugu or Batakari (smock), kaba and slit, men's shirts and trousers and women's sheath or skirt and blouse. These garments are produced mainly through custom-made processes by tailors and seamstresses (JICA, 2008) and it can take between a week and more for the garment to

be manufactured. According to Hoefter (2001), due to the popularity and over-reliance on the custom-made garments, the ready-to-wear industry in Ghana is not flourishing.

Garments produced and sold in Ghanaian markets often compete with foreign products imported into the country. Second-hand products that flood the country because of trade liberalisation policies implemented in the 1990s hamper sales of locally manufactured products (Asiedu, 2010). The reasons for the appeal of second-hand clothes and imported garment in the Ghanaian markets are due to a number of factors, including price, quality, and sometimes lack of variety in styles and designs of locally produced garment. However, the effect of the second-hand imports is devastating for the local industry. In an article on the exports of second-hand clothes, Rodgers (2016) reported that Ghana alone imported $65m worth of second-hand clothes from the UK, $12m from Canada and $11m from Netherlands in the year 2016.

Undoubtedly, the influx of used clothes and imported garments has affected the local firms' ability to compete, forcing some of the companies to close or downscale production (Quartey, 2006; Asiedu, 2010). Besides, it has also affected the economic value of garment production to the national economy. Despite having the highest number of establishment and the largest number of employees [mainly in the informal sector], the garment manufacturing industry is far behind in relation to economic importance in the overall economy, contributing only 3% of value-addition to the industrial sector (Table 2.4), perhaps because the majority of firms are mainly in the informal sector.

Table 2.4: Value-added by industry division

S/N	Industry	%
1	Metal ore mining	20
2	Food products and beverages	18
3	All other industries	13
4	Electricity and water supply	11
5	Wood and wood products excluding furniture	10
6	Chemical and chemical products	7
7	Other non-metallic products	5
8	Basic metals	4
9	**Wearing apparel**	**3**
10	Furniture	3
11	Fabricated metals product except machinery and equipment	3
12	Refined petroleum products	3

Source: Ghana Statistical Service (2003)

Data from the African Development Bank (2011) showed that Ghana had 46% middle-class population meaning more and more people had discretionary income to buy luxury goods, including fashion. With the expansion of the middle class in Ghana, the country is beginning to experience some 'fashion renaissance' involving large retailers that sell garments in bulk, niche products and brands appealing to customers with different tastes. There is also Couture fashion ready in the local market with relative ease at competitive prices. Although local producers are yet to tap fully into the 'Fashion Renaissance', there is no doubt the customer base is expanding, creating opportunities for niche products as more and more people have discretionary income and are showing interest in fashion.

Raw Materials for garment production in Ghana

According to JICA (2008) and Quartey (2006), raw materials for garment making in Ghana are predominantly cotton-based from African prints fabrics and resist dye fabrics imported or produced locally. Examples include batik, tie-dye, screen print or wax and even hand woven kente which is made up of cotton, polyester, nylon, viscose or silk. Most of the locally made print-based fabrics are produced from four textiles companies:

Akosombo Textiles Ltd (ATL), Ghana Textile Printing (GTP), Printex and Ghana Textiles Manufacturing Company (GTMC). Except for ATL that produces its gray cloth through its weaving and spinning subsidiary, the rest import from China and Burkina Faso, raising the cost of the gray cloth which ultimately impacts on prices. Apart from the textiles companies, local artisans produce the batik-tie products that are also used to create garments but often in smaller quantities.

Equipment used in garment production in Ghana

According to a report by JICA (2004, p. 38) in 2004, a survey of 83 firms conducted to outline production equipment utilized in the garment industries in Ghana noted that 'the number of industrial machines including overlocking machines were much less than hand operated machines'. The report gave a breakdown of equipment used in the garment firms as indicated in appendix J.

It is not surprising to observe the large use of hand operated machines, because the vast majority of Ghanaian firms operate at the micro-size level and production facilities for such micro-sized firms for garment production are relatively basic (JICA, 2008). As can be observed from the appendix J, the majority of the garment firms did not have complex sewing equipment. Micro-sized firms do not need or perhaps cannot afford modern production facilities, since they only produce for the domestic market. This has implications towards their ability to do mass manufacturing, and it therefore explains, (among others), the reasons why such firms are less competitive. In the medium and large-sized firms operating currently, all forms of production facilities exist for mass production, and if a required equipment is not available for use in a firm, it is relatively easy to import such equipment into the country.

Hence, medium to the large-sized companies, mostly have adequate equipment to produce for both domestic and foreign markets. What is, however, unclear, is whether or not skills exist for training, as well as for using or servicing such machines. Some anecdotal evidence through industry conversation points out that some medium to large-sized firms struggle to find local employees with the requisite skills to repair some of the equipment, suggesting that perhaps there are skills gaps or shortages in relation to servicing of some modern equipment.

Challenges of the Garment Industry of Ghana

The garment industry of Ghana, just like most SMEs in the manufacturing sector, has a number of problems affecting its ability to compete internationally, increase sales, enhance profit, employ more people and generate higher economic value as is expected of a sector that has the highest number of establishments and employments. Some of these challenges are related to skills shortage and gaps, lack of government support and others (Figure 2-2).

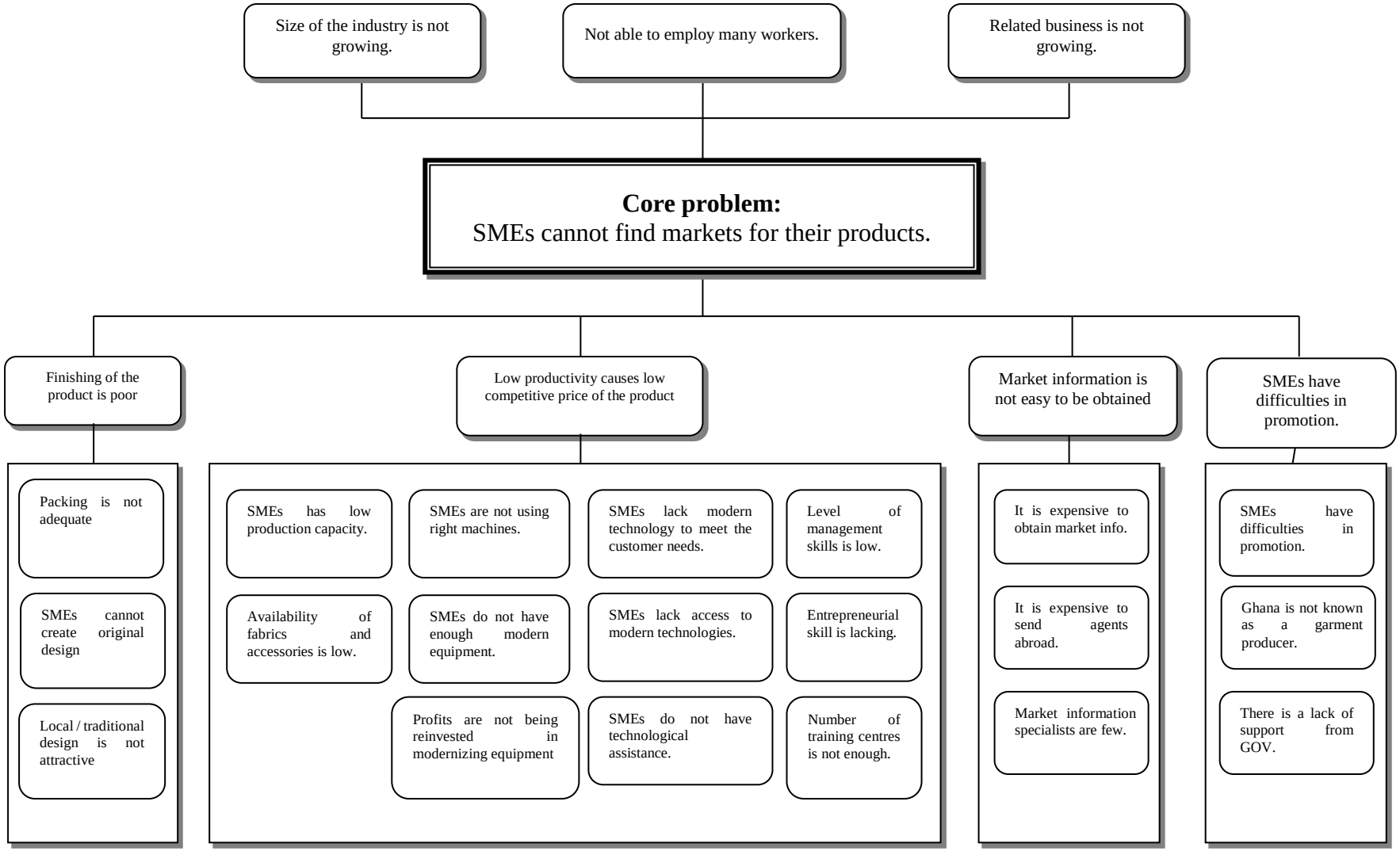


Figure 2-2: Core problems of the garment industry

Source: JICA (2008)

To put the data in Figure 2-2 into proper context, it is important to know that according to the Ghana Statistical Service (2016), there are four types of business establishments in Ghana. The first is the micro establishments. These types of establishments typically engage up to six workers. Next is small-sized establishments that employ between six to 30 workers, followed by medium-sized establishments that engage between 30 to 100 workers and finally large-sized establishments that engage more than 100 workers. Of these four types of establishments, the vast majority of garment manufacturing firms are concentrated in micro-sized establishment engaging just about 6 workers. These micro-sized companies are often owner-managed establishments operated and managed solely by their owners. Micro-sized companies mostly serve the domestic market and often do not invest in human resource management. As a result, the owner-managed micro-sized business is characterized by inefficient operational skills, insufficient employee training, poor skills upgrading and delay in adopting new technology as can be seen in Figure 2-2.

In the past, the government of Ghana had put in place policies to upgrade skills, provide resources and facilitate the growth of the industry to move most of such firms from micro-size to medium or large-sized companies (Ghana News Agency, 2016). For example, under the auspices of United Nations International Development Organisation (UNIDO) and as part of the PSI programme, vocational training centres were set up to upgrade the technical-know-how of the industry. One of such training center was the Textile Garment Trading Centre at Accra North to take advantage of the AGOA and other favourable trade negotiations that the government had secured for the country (Ghana News Agency, 2012). Following those initiatives, some skills were upgraded, new firms were set-up with private partnership agreements and currently, there are

seven large firms operating under an Export Free-Zone license (Ghana Free Zones Board , 2017).

Despite some modest progress, the vast majority of firms still operate at the micro-size levels and the few that operate at medium and large-size levels do not have the necessary division of labour that is a common feature of companies in other parts of the world. According to Sarokin, (2017), division of labour enables firms to increase productivity because, through the division of labour, a workers' skills are allocated efficiently to complete a task, and also the transition between different tasks is reduced. Therefore, it is most certainly the case that the absence of a division of labour has reduced productivity in the garment sector.

Analysis of the Strength, Weaknesses, Opportunities, and Threats (SWOT) of the Garment industry in Ghana

As the name suggests, a SWOT analysis is a type of analysis that is carried out to determine the strengths, weaknesses, opportunities, and threats in any situation. Although the garment industry has a number of weaknesses, as was discussed in Figure 2-2, it is important to also discuss strengths and opportunities as well as threats to the industry in providing a complete overview of the industry. The SWOT analysis was conducted by JICA (2008) as part of the report on the state of the garment industry of Ghana and was based on the core problems of the industry as shown in Figure 2-2.

As seen in Table 2.4, the SWOT analysis also underscored the nature of skills labour and its impact on competitiveness as it acknowledges the fact that low levels of skills exist in the garment industry (under Weakness). Although the analysis shows that training centres were providing skills (under Opportunities), the low level skills was also seen as a weakness in the garment industry, implying the need to examine the

impact of skills on the current manufacturing environment and its impact on global competitiveness (See Table 2.5)

Table 2.5: SWOT Analysis of the garment industry in Ghana

	Market	Production Technology	Raw Materials	Human Resource	Development capability	Business Environment
STRENGTH	• The substantial Afro-centric market in U.S. and Europe.	• Traditional fabrics such as Kente can be obtained.	• Ghana is a key production country of African prints. • Cotton production	• Comparative low wage (Min. 19,200 cases/day) • Workers are obedient and can be taught in English.	• Potential Afro-centric design ability	• Stable democratic government
WEAKNESSES	• Low purchasing power in domestic market • Cheap imported second-hand garments dominate the local market.	• Low production efficiency • Old machinery • Inadequate maintenance • Low capability to control production	• The high cost of fabrics and accessories. • Unstable raw material supplies	• Lack of work ethic • Low level of skill	• Limited information about world fashion trend	• Difficulties in access to finance due to the high cost. • Lack of management capability • Lack of business information

Source: JICA (2008)

	Market	Production Technology	Raw Materials	Human Resource	Development capacity	Business Environment
OPPORTUNITIES	• Duty-free export to US market (AGOA). • Free zone regime provides favourable conditions to exporters. • Potential sales channels in Ghanaian communities abroad.	• PSI scheme provides machinery.	• Improvement of business environment attracts additional investment in textile industry.	• Training centers provide more skilled workers. • Training centres establish in other cities.	• New generation designer brings more sophisticated Afro-centric design.	• Promotion of PSIs. • Availability of finance scheme such as EDIF
THREATS	• Special treatment for importing foreign fabrics in AGOA comes to the end in 2007. • Competition over the same niche market is getting aggravated.		• Declined local textile industry forces the garment industry to rely on imported materials.			

Source: JICA (2008)

2.2.1 Industrialisation policies relating to the garment industry (1960 – Present)

According to Quartey (2006), Ghana joined other African countries to pursue industrialization in the 1960s and 70s with the aim of moving from the agrarian base to modern economies. Consequently, the country passed policies to promote Import Substitution Industrialization (ISI) to produce locally and reduce dependence on foreign imports. To achieve that, local firms were encouraged and given tariff incentives. The ISI heavily favoured the textiles sector of the country to the extent that the textile sector contributed about 27% of manufacturing output and earned the country some needed foreign exchange (MOTI, 2004).

With the textiles sector booming, locally made fabrics were available for garment production. Though there are no statistical records of garment production at the time, it is not out of place to assume that the garment industry certainly benefited and produced more garments as a result. However, by the 1980s the textile sector was operating at a low capacity as a result of a shortage of foreign exchange to buy raw materials for the textile sector which had become heavily dependent on government. The effect of poor output affected the availability of local fabrics for the garment industry (MOTI, 2004; Quartey, 2006).

In 1986, under economic pressure, Ghana accepted the recommendation of the IMF and World Bank to liberalize trade. Consequently, the Structural Adjustment Programme (SAP), among other policies, was initiated to open the economy to increase competition and growth (Ahmed & Anuroo, 2000). Overall, some research has shown that the trade liberalization policies were good for the country (Asiedu, 2010; Edwards, 1998). However, the textiles and garments industry is widely believed to have been negatively impacted by the trade liberalization policies (Ghana News Agency, 2016). This is

because trade liberalization in the textiles and garment firms opened the domestic market to foreign products that were cheaper and out-competed domestic manufacturers, thereby causing some businesses to collapse (Ghana News Agency, 2016).

One of such elements was cheaper goods, as noted in this research already, as second-hand imports from some European countries exported to Ghana. With the influx of second-hand goods and a near collapse of domestic manufacturing, unsurprisingly, from the 1990s onwards, the garment industry of Ghana was de-linked from the global supply chain (MOTI, 2004), despite the availability of opportunities in the global garment manufacturing sector. Local production was heavily affected by foreign imports and employment prospects and numbers tumbled (Quartey, 2006). Therefore, in the year 2000, the government of Ghana, workers' union of the textile/garment sector and business owners decided to take a number of initiatives to strengthen the textile and garment firms (Ghana News Agency, 2001).

Consequently, in the year 2001, the government of Ghana inaugurated the Presidential Special Initiative (PSI) to benefit from preferential trade agreements from the US (African Growth and Opportunity Act) and the EU (the Cotonou Accord). These trade agreements offered beneficiary countries duty-free and quota-free access to both US and EU markets. With the PSI in place, the government strategized to establish 100 Ghanaian-owned medium-sized companies, attract foreign large-scale garment producing companies to invest or relocate to the newly created garment village in Ghana's EFZ and build a large pool of sub-contractors working under merchant exporters (Ghana News Agency (GNA), 2001). These strategies were to be achieved by a number of initiatives including:

- The Textiles and Garment Cluster Network: to address problems faced by the sector and make recommendations to governments on improving the sector.
- Textiles and Garment Training Center: to train and upgrade skills towards mass production, global sourcing and contracting related issues that affect the industry.
- Allocations of production space to exporters both at Accra and Tema under Free Zone License
- Promotion of local fabrics and garments under the Friday Wear initiative
- Reduce smuggling of goods through non-approved routes into the country and cease and destroy goods smuggled through the country
- Reduce tax burdens on textiles and garment sector (GNA, 2001)

Undoubtedly, these policies and initiatives lifted the textiles and garment sectors and increased Ghana's export of garments. As reported by Rolfe and Woodward (2005), garment export reached over a million dollars in 2004, and, for example in 2009, export of textiles from Ghana reached US$18, 272, 616 and US$15,664, 595 in 2010.

2.3 Skills - towards a definition

A review of literature shows that a skill is mostly defined in relation to a task, competence or ability. The UK Commission Employer survey (2010, p.4) defines 'Skill' as 'the ability to perform tasks' or according to Shah and Burke (2003, p.15) cited in Bruni, Luch, and Kuoch (2013) to 'perform a productive task at a certain level of competence'. In the view of Mok, Geoff, Stevens, and Timmins (2012, p.2) 'Skills represent a basic input into the firm's production technology. Individuals with higher skills levels have more human capital and so produce greater output.'

A few authors, however, define skills beyond task, competence or ability. These include Gambin, Hogarth, Murphy, Spreadbury, Warhurst, and Winterbotham (2016), who define skills as 'the ability to carry out the tasks that comprise a particular job. An issue that is too often sidestepped is the level of this ability and, put bluntly whether this ability relates to "mundane accomplishment" or "virtuosity" in the task'. Similarly, according to Morris and Reed (2008) a skill refers to experience and qualification. This means that for a company to be considered as having the relevant skills, its workers must have the relevant experience and qualifications that show they can demonstrate working competence. In situations where the employees have skills lower than what is necessary to meet the business objective or carry out a task, it is referred to as a skills gap and when there is a lack of qualified people in the labour market it is referred to as skills shortage (Pye, 2004). Skills can also be described as demand-sided or supply-sided. A demand-sided skill refer to skills needed by manufacturing companies, while supply-side shortages refer to skills training, apprenticeship and the role of institutions in providing the skills (Pye 2004; Morris & Reed 2008).

2.3.1 The importance of analysing skills in the garment sector

There are a number of reasons why it is important to analyse skills levels in the garment sector of Ghana. The first reason is that analysing skill levels helps to identify possible skills gaps and shortages in the garment-manufacturing sector to give clues about business efficiency or poor recruitment strategies. Skills shortage also reflects recruitment challenges, uncompetitive labour realities or initiatives that discourage work participation (Morris & Reed, 2008; Partnership for 21st Century Skills and Deloitte Touche Tohmatsu Limited and U.S. Council on Competitiveness, 2016). Therefore, analysing skills levels in Ghana is important to diagnose possible skills gaps

or shortages that might exist in the garment industry and, most importantly, if there are any gaps or shortages, what steps can be taken to address them.

The second reason why it is important to analyse skills levels is that there is a positive relationship between skills levels and the competitiveness or competitive advantage of firms. This is because in the garment and textiles sector, just like in all manufacturing sectors, skills and labour management have been identified as critical factors in competitive advantage, according to the United States International Trade Commission, (2004) and Hinshaw, (2012). For instance, A Global Competitiveness Index report conducted by the Deloitte Touche Tohmatsu Limited and the U.S. Council on Competitiveness (2016) to identify the most important drivers of competitiveness among over 500 CEOs of Manufacturing firms around the world, identified high skills as the number one driver of manufacturing competitiveness, in support of the notion that there is a strong relationship between skills and competitiveness. Furthermore, in Europe and some developed countries, for example, as a result of high labour skills, some garment manufacturing firms were able to reposition labour towards niche, luxury and exclusive brands to remain competitive (International Labour Organization, 2014; Daniels, 2007; Morris, 2007), something that would have been difficult if skills levels were low. As a result of the relationship between skills and competencies, the firms were able to halt the flow of job opportunities that were fast moving to developing countries as a result of cheap labour.

Thirdly, an analysis of skills levels provides an avenue to value and plan towards skills demand and supply in the event of changes in production or processes (Trent & Monczka, 2002; the United States International Trade Commission, 2004). Following a national skills audit in various sectors of the economy, Australia, Britain and South

Africa identified critical skills needed to retain jobs in the Textile and garment industry that were fast moving to more competitive countries (Morris & Reed, 2008). Analyses of skill levels enabled those countries to prepare policies to address skills related challenges. Therefore, the Australian, British and South African skills analyses offer an example of how an analysis of skills can help countries address changes in production and processes that affect skills and business competitiveness in the long term.

Finally, the analysis of skills is critical to the functions and growth of the various sectors of the national economies (The Youth Employment Network and International Youth Foundation, 2009). For any sector of an economy to develop, not only must skills be adequate in terms of quantity, it must also be upgradable and flexible in anticipation of future needs and changes. As more and more people are skilled enough to be employed to fill positions in the manufacturing firms, the overall sector of such manufacturing industry (e.g. fashion, Textiles or leather) grows to contribute to the national economy by way of the country's GDP (Boateng & Ofori-Sarpong, 2002). Therefore, analysis of skills levels is important to determine the extent to which the existing or future skills levels affect the larger economic indices of the country.

2.3.2 Skills levels in Ghana's manufacturing sector

Ghana, unlike other countries such as the UK, South Africa or Australia does not yet have an entity or a specific institution that is responsible for collecting and analysing data on skills needs of industries (Myjoyonline.com, 2018). In South Africa, for example, Morris and Reed, (2008) reported that SETA is responsible for undertaking the audit of skills. This enables SETA to advise government and provinces about skills needs of industries and skills supply from all educational institutions. Data from SETA is also made available to researchers, academics and policymakers to peruse. In the

United Kingdom, according to Pye (2004), there is the Process and Manufacturing Skills Council that is charged with the responsibility of generating relevant data, and a skills dialogue that informs policy, academic and manufacturing institutions about skills gaps and shortages. Finally, in Australia there are various institutions that advised both government and industry about skills. These include the Australian Industry and Skills Committee known as ASIC and the Skills Service Organisations (SSOs). Both organisations provide relevant skills related information that ensures that decisions taken in relations to skills, whether it be education, policy, immigration or employment are based on sound and well informed data.

In Ghana, the responsibility to generate skills data falls under the Council for Technical and Vocational Education and Training, known as COTVET (Myjoyonline.com, 2018). However, it is only now that COTVET is undertaking an assessment of skills. According to a report on Myjoyonline.com (2018) COTVET has signed an agreement with PriceWaterHouseCoopers (PWC) to analyse skills in the seven areas of the economy namely:

i. Agriculture
ii. Manufacturing
iii. Construction
iv. Information Communication Technology
v. Tourism and Hospitality
vi. Energy (Renewable energy and Oil & Gas)
vii. Electronics (Automation and Electricals)

The report notes that:

> *"... the audit firm is expected to among other things, profile occupations in all the seven priority areas; develop a directory of the skills-set requirements of all sectors, conduct programmes audit of Technical and Vocational Education and Training (TVET) institutions and Technical Universities and their related skills-set; conduct analysis of the skills gaps identified in occupations within sectors; and determine the program relevant to the world of work with stakeholder".* (myjoyonline.com 2018, p. 3)

It is expected that when the report is complete it will help in the establishment of the Sector Skills Councils (myjoyonline.com, 2018). Thus, it is after the establishment of the Sector Skills Councils that Ghana will have adequate institution that will fully be responsible for collecting, projecting and analysing skills needs of industries and skills supply from training institutions.

Prior to that initiative from COTVET, the Ghana Statistical Service (GSS) published some information relating to skills in the manufacturing sector of Ghana. Since the ability to engage in global business depends on the labour skills available in the country, the GSS reviews labour skills to provide some understanding of skills adequacy or competence in the manufacturing sector. According to data from the GSS (2016), about 78% of all persons engaged in all manufacturing are skilled (Table 2.6). The GSS defined skill as 'persons who are engaged in their field of training; otherwise they were considered to be unskilled.

Table 2.6: Percentage of Skilled and Unskilled Labour

Size of Establishment	Skilled	Unskilled
Large	86.0 %	14.0%
Medium	80.6	19.4
Small	72.3	27.7
Micro	77.0	23.0
All Establishment	78.4	21.6

Source: Ghana Statistical Service (2016)

A look at the data suggests that labour skills in the manufacturing sector are quite high (Table 2.6). However, a careful analysis suggests otherwise. First, the definition was too narrow in the sense that it equated training to competence. The definition essentially assumed that once an individual is trained, such a person is competent. However, that is not always the case. Even though a person might be trained, such a person might not necessarily be considered competent to perform the task. It is how well the task is completed (competence) that determines skills and not necessarily the mere fact of having been trained (Green; 2011).

It is most likely that if competence were considered in addition to training, the numbers would have been different. In addition, even though people might be trained, there is the probability that gaps exist between what they were trained for and task performance, meaning that skill gaps could still occur despite the fact that individuals have been trained. Therefore, the reports' definition of skills overlooks the possibility of skill gaps which could also have affected the data.

Another important fact worth discussing about the data is that with specific reference to the garment industry, as noted in the study by JICA (2008), micro and small size firms form the majority of establishments followed by medium and large establishments. This means that, based on the data (Table 2.6), more than one-quarter (27%) of persons in small-size and nearly one-quarter (23%) of persons engaged in micro establishments are unskilled. Thus, it is fair to say that even with the narrow definition of a skill assumed by the Statistical Service, almost one-quarter of persons engaged in small and micro size garment firms are unskilled. Thus, raising the possibility of skills gaps and shortages that might be prevalent in the garment sector.

The data from the Statistical service were focussed on all the manufacturing industries of Ghana and not specifically on the garment industry. According to Baah-Boateng and Baffour-Awuah (2015), data for analyzing skills gaps and shortages in specific industry sectors in Ghana are virtually non-existent.

2.3.4 Skills acquisition and skills profile in the garment sector

Many people, as individuals, have varied reasons or motivations for acquiring skills, and institutions and corporations as entities have their own reasons for acquiring skills. For individuals, it enables them to perform better in the economy and enables them to earn the wages they want. For firms or corporations, it helps them to increase productivity, operate efficiently and thereby increase their profits. According to Aring (2012), Skills acquisition can also be grouped into:

i. Company-specific: non-transferable skills
ii. Technical job-specific skills which are transferable between employers though not necessarily across all occupations and/or sectors
iii. Generic skills that is transferable across occupations and sectors

Lazear (2003) contends that all skills are mostly general in nature, even though the employers that train them may be able to obtain a relatively high economic rent from them in certain organizational settings. Consequently, employers are able to retain the employees they train.

In the garment industry, skills required for production are mostly technical job-specific skills and generic skills (Morris & Reed, 2008). Although individual firms may train workers in additional company-specific skills, it is not a common practice in the garment industry. Table 2.7 - Table 2.10 presents an overview of activities in the garment industry and the requisite job categorization and skills demands to enable the

study to profile the technical job-specific skills that would be the focus of this study, (unit of analysis) as well as the generic skills. The profile is presented as follows:

i. steps in the manufacturing process with relevant occupational categories
ii. the profile of the various occupational categories and their job description
iii. occupational categories with technical job-specific skills requirements
iv. the profile of generic skills in accomplishing the tasks

Table 2.7: Steps in Garment Manufacture with Relevant Occupational Categories

SN	Steps	Description of step	Occupational Category
1	**Design/Sketch**	Production of working sketches of styles or design details with measurements	Fashion Designer
2	**Pattern Making**	Production of various forms of pattern or drapes based on design/sketch, done in any size to enable sample garment to be made	Pattern Maker/Cutter Fashion Designer
3	**Sample Making**	Sample of garment is produced based on specifications of buyers to analyze pattern fit and design and approved by buyer upon construction	Fit Model/Sample Maker
4	**Production Pattern**	This involves bulk production of patterns taking into consideration direct sample, specification sheet/measurement chart, actual body size measurements, ease allowances and sewing allowances	Production manager
5	**Grading**	This process could be part of pattern production but performed at the request of a buyer where patterns are graded into different sizes such as S, M, L, XL or XXL	Pattern Maker
6	**Marker Making**	Involves the process of determining fabric yardage for each style or garment.	Pattern & Fabric Cutter
7	**Spreading**	Involves spreading fabric on the table for cutting. Fabric is often laid in piles for cutting and laid in such a way to avoid or prevent fabric wastage	Pattern & Fabric Cutter
8	**Cutting**	Involves cutting fabrics based on marker dimensions	Pattern and Fabric Cutter

9	**Sorting and Bundling**	Involves the precision of sorting out cut fabrics according to sizes and grouping each size into a bundle	Apprentices and Trainees
10	**Sewing or Assembly**	Involves assembling garment parts based on bundles	Production Line/Machinist
11	**Inspecting**	Involves inspecting all aspects of the manufacturing process based on quality specifications	Quality Assurance
12	**Pressing and Finishing**	Involves ironing, pressing creases or lines, molding with heat-set equipment. Sometimes this process may be performed before inspection	Pressing/Finishing
13	**Final Inspection**	Involves final inspection of product based on quality standards set by buyer or regulation. Specific attention is paid to sewing defects, sizing defects and garment defects	Quality Assurance
14	**Packaging**	Involves sorting finished garments in packages based on design and size	Apprentices/Trainees
15	**Cartooning**	Involves placing packaged articles into cartoons based on the specifications of the buyer	Apprentices/Trainees
16	**Shipment/Dispatch**	Involves sending the final products to buyer	Apprentices/Trainees

Source: Mayedul, (2017); O*NET Online, (2017)

Table 2.8: Occupational Categories and Job Description

S/N	Occupational Category	Job Description
1	**Pattern Maker/Grader**	The pattern maker understands and interprets the designs from the designing studio into patterns manually or electronically by the use of certain soft wares. He or she also obtains graded patterns from basic/ final patterns or sample patterns manually or by CAD.
2	**Pattern Cutter**	The pattern cutter understands and interprets the patterns and proceeds to cut out by completing the following; *Marker Planning*- the cutter arranges the pattern pieces on the fabric economically according to the grain lines/ instructions on the patterns or the design of the fabric. This is done manually or by the use of CAD. *Cutting*- the cutter lays or spreads the fabric and cut out to the specifications.
3	**Quality Assurance officer**	The quality assurance officer is responsible for ensuring the quality of product(s) through all stages of the process from receipt of materials to dispatch of finished goods. He/she and his/her team will provide analysis and support to factory team and will lead the change in continuous improvement in everything. Check for poor sewing and measurements against the original specification.
4	**Production Manager**	Reports to the Managing director, is responsible for planning, and scheduling of production, preparing production reports, manage day-to-day activities of the production department. Plan and monitor production to ensure that delivery dates are met.
5	**Production Supervisor**	The production supervisor is responsible for coordinating activities of workers engaged in the garment manufacturing such as cutting, sewing, pressing, finishing and packaging. His aim is to inspect work for adherence to specification, detects poor work quality, and to define the necessary measures to correct the cause of the faults. Plan and monitor production to ensure that delivery dates are met.
6	**Pressing and Finishing Supervisor**	The supervisor supervises pressing of the garment during and after construction, fusing of interfacings and interlining to sections of garments and the preparation of small parts such as pockets collars banner. Final finishing includes cutting thread ends and inspection of stains and by carefully going over the finished garment sewing label example care and identification and size labels

7	**Merchandiser**	Merchandiser is responsible for sourcing fabric's inquiry, quotation, and follow-ups. Sees to samples approvals, order status, samples, sales invoice, shipment details, invoicing, collection, and cost & profit analysis. Also involved with product development & design, importing and exporting the goods in time and procurement & execution of the product.
8	**CAD/CAM Technician**	This is the job done by a technician or fashion designer who is competent in the use of the appropriate computer soft wares for pattern making, fashion illustration or fashion designing such as Adobe Illustrator, Photoshop, Gerber Accumark and others. Vividly present visual picture of the designer's ideas. Also, make design drawings into technical or working drawings.
9	**Digital Prototyper**	This is a designer with sufficient computer skills to use these skills to make a computer model or dummy of the designer clothes. This is to give form to flat paper designs.
10	**Fit Model/Sample Maker**	This is the job for the individual who has a good understanding of the human figure. He understands the proportions of the figure and the silhouette. He, therefore, does the fitting or supervises it before the garments are finished for the clients. He could work at the fashion shop or the designing studio.
11	**Fabric Buyer**	This is a post for an individual with an excellent sense of color, silhouettes, and shapes. Patterns and their position in the Designs of the garment must be produced in the fabrics that bring out the designs best.
12	**Fashion Designer**	The fashion designer is one that understands designs from technical perspective in producing designs and technical specifications for designs keeps up to date with emerging fashion trends, able to create/visualize an idea to produce design by hand or computer software, plan and develop fashion lines and liaise with other members of the design and production team.

Source: Mayedul, (2017)

Table 2.9: Occupational Category and Technical Job-specific Skill Requirements

S/N	Occupational Category	Job-specific Skill Requirements
1	**Pattern Maker**	• Pattern Making Skills: the ability to do grading, sizing, drafting or draping of fabrics that require a technical hand. • Planning Skills: ability to plan and utilize pattern making resources to maximize output in layout, cutting or determine quantity related measurements and calculations • Computer Literacy skills: ability to use software or applications such as CAD to produce or work with patterns • Interpersonal Skills: ability to communicate, interpret or understand instructions as conveyed by designer or working colleagues
2	**Pattern and Fabric Cutter**	• Pattern and Fabrics Cutting Skills: ability to cut accurately and cut smoothly with cutting machines of all types. • Analytical and problem-solving skills: ability to develop different approaches to cutting out different fabric and selection of correct speed and blade for each type of fabric • Machine operation Skills: ability to operate machines and repair minor faults • Planning Skills: the ability to plan layout and cutting in based on pattern markings to avoid waste.
3	**Quality Assurance**	• Quality assurance Skills: Experience in manufacturing processes or systems, knowledge of quality characteristics expected of products as stated in Laws or expected by contractors. • Operational/Analytical Skills: ability to analyze possible causes of faults or defects based on the operational set-out, remedies to such faults and recommend changes in operation • Interpersonal Skills: the ability to work with colleagues to ensure laid down procedures are followed in lab, workshop, store or production line and controlling or maintaining efficient use of labour. • Organizational Skills: ensuring on a daily basis that data are collected and documented by production line operators and forwarded to him or her and keeping attendance records of staff.
4	**Production Line/Manager**	• Production management Skills: ability to plan and schedule production, manage day-to-day activities of production processes or systems, monitor production to control wastage

		• Organizational Skills: Collect and prepare production report, communicate with employees to address employee related issues. • Performance management skills: ensuring that planned production output and quality are achieved and establishing good performance management system to track and monitor performance • Decision-making skills: ability to independently take the decision to solve problems in the production process, administrative process or organizational process.
5	**Production/Machinist**	• Machining Skills: selection of needles to suit specific fabric types, appropriate stitch length, seam strength and quality for various fabrics • Operation skills: ability to operate multifunctional machines, produce a specified number of stitches per minute, assemble a garment within a specific schedule and identify and remedy faults on sewing machines. • Management skills: the ability to manage work stress, work load, time schedule and relate with colleagues and working environment.
6	**Pressing and Finishing**	• Pressing/Finishing Skills: the ability to press garments during and after construction, fusing of interfacing and interlinings to sections of garment and preparation of small parts such as collars and pockets. • Finishing Skills: experience in working with fabrics or garments with different finishes, cutting thread ends, eliminating stains, making sure finished garments meet quality standards and attaching labels for size, care and identification • Pressing Skills: the ability to use pressing tools and equipment based on their function, knowledge of various fabric types and reaction to heat and right temperature for right fabrics. • Organizational and Management Skills: ability to meet day-to-day work schedules, manage work expectations, understand instructions, respond to changes in work schedule and manage stress.
7	**Merchandiser**	• Merchandising skills: Experience with sourcing of fabrics or findings, working knowledge of fashion trends, prepare quotation, design specification, design briefs, make and receive orders • Financial Skills: perform cost and benefit analysis of every production and determine financial implications of decisions.

		• Marketing Skills: ability to make good sales, persuade and convince potential customers, knowledge of fashion fairs, trade shows or markets and appraise the work of competitors • Organizational Skills: ability to take initiates, persuade workers to pursue organizational goals or aim • Supervisory Skills: ability to lead individuals or teams to take initiatives and supervise them to achieve production goals.
8	**CAD/CAM Technician**	• CAD/CAM Skills: Experience in design processes, production processes, selection and use of appropriate CAD/CAM methods of production • Operational Skills: ability to produce original concepts, digital prototypes, illustrate those concepts using hand drawing or CAD/CAM software and how concepts produced from CAD/CAM can be reflected in production.
		• Presentation Skills: ability to explore ideas, organize those ideas into design projects and present them, • Illustration Skills: ability to present two-dimensional and three-dimensional drawings to reflect a particular effect, work with different body defects, correct those defects using garment details or features
9	**Fit Model/Sample Maker**	• Sample making Skills: ability to convey design concepts into practice, checking fitting of products or models, estimating production time and utilizing production resources • Operational Skills: influence production methods based on knowledge of production processes, correcting body defects with garment details or features • Analytical Skills: ability to analyze, synthesize and evaluate products based on production processes
10	**Apprentice/Trainees**	• Generic Skills: ability to use and apply generic skills such as numeracy, literacy and life skills
11	**Fashion Designer**	• Fashion Skills: ability to conceptualize design, illustrate design by hand or through computer software, lead production of such design. Ability to identify, select and use appropriate methods of design fashionable clothes. • Research Skills: the ability to research trends and past records, analyze, synthesize and evaluate research data, identify sources of inspiration and appraise competitor's work.

	• Operational Skills: ability to set up operational process or systems for manufacture, supervise operational processes and coordinate different products in the operational process • Management skills: the ability to manage work stress, work load, time schedule and relate with colleagues and working environment. • Decision-making skills: ability to independently take the decision to solve problems in the production process, administrative process or organizational process.

Source: Mayedul, (2017); O*NET Online, (2017)

Table 2.10: Generic Skills

S/N	Generic Skills	Description
1	**Computer Literacy**	Knowledge of basic Microsoft suits, use of internet, email functions and basic operations of computers
2	**Multitasking**	Ability to dove-tail related tasks to save time
3	**Communication**	Using oral and written communication effectively, interacting internally and externally and knowledge of communication channels of organization
4	**Customer handling**	Ability to address customer needs, temperament and customer concerns
5	**Team working**	Under team dynamics, working with others on production and providing support
6	**Foreign language**	Ability to speak, write or speak fluently in different languages when interacting with customers from different backgrounds
7	**Problem solving**	Ability to solve basic on-the-job problems related to tasks
8	**Management skills**	Refers to properly utilizing both tangible and non-tangible resources
9	**Numeracy**	Understanding numbers
10	**Sales and Marketing**	Refers to sales, advertisement or promotion
11	**Personal Attributes**	Personal characteristics such as temperament,
12	**Time Management**	Working on time, reporting on time and understand work schedule
13	**Experience-related**	Refers to long years of serving that result in familiarity with organization and its processes

Source: O*NET Online, (2017)

2.3.5 Skills imbalance indicators

There are a number of factors that are deemed to have effect on skills. Therefore, researches about skills are often conducted by examining any of these factors to determine 'imbalance'. The assumption is that any imbalance based on these factors indicates a possible problem in acquisition, application or supplying of skills in either a country or firm. In other words, any imbalance could affect skills competence (Gambin, et al., 2016, p. 17). Table 2.11 presents a list of skills imbalance indicators and the rationale for which researchers use that indicator and the limitations of using that indicator.

Table 2.11: Review of Skill Imbalance Indicators

Indicator group	Issues
1. Wages	**Rationale:** Positive changes in pay may indicate a tightening of the labour market **Limitations:** Wages change for many other reasons (not least general inflation). Even when skill shortages do exist employers may be reluctant to raise wages and adjustments often occur instead in non-wage elements of the work package.
2. Employment/ hours	**Rationale:** increases in employment or average hours worked for a particular occupation is a signal of rising demand (and therefore an indirect indicator of possible skill shortages).' (Other indicators such as overtime working, recruitment intensity, and labour turnover can also provide useful signals). **Limitations:** Employment and hours may rise for many reasons and neither are definite indicators of a shortage.
3. Unemployment	**Rationale:** The most commonly used indicator of a surplus **Limitations:** unemployment can coexist with vacancies; it can fall for reasons unconnected to skill shortages (for example a general upturn in the economy). Occupational unemployment rates typically relate to a person's last paid job, not to the kinds of jobs for which they are currently searching.

4.	**Individuals' reports of skill utilization**	**Rationale:** individuals will be able to give an indication of the extent to which they use the skills they possess in their current job, or the extent to which they lack the skills to fully carry out their current job. **Limitations:** individuals may over-state the extent to which they possess skills therefore providing an upward bias to estimates of skill surpluses and a corresponding downward bias on shortages.
5.	**Vacancies**	**Rationale:** The most commonly used indicator of skill shortage - a proxy for Demand less Supply. **Limitations:** vacancies can persist for many reasons other than a skill shortage (for example, poor working conditions and low pay). Employers have an incentive to exaggerate skill shortages to encourage the state to intervene and bear the costs of training. Distinctions can be made between all reported vacancies; hard-to-fill vacancies (HTVs); and skill shortage vacancies (SSVs).
6.	**Occupational skill profiles**	**Rationale:** a means of looking at the extent to which people working in an occupation have the average qualification profile – thus indicating the proportions who fall above and below the average (or ± one standard deviation of the average) **Limitations:** May provide misleading results depending upon the factors that give rise to the average.

Source: Meagher et al (2014) adapted from (Gambin,et al., 2016, p. 17)

In addition to the information contained in the skills imbalance, according to Cappelli, (2015, p. 252) the complaints and reports as made by employers and industry players have almost always been in the nature of:

i. Limitations or shortfalls in the skills of prospective employees attributable to the educational system. This situation is referred to as **Skills Gap.**

ii. Shortfalls in particular industry area skills such as engineering, information technology and specialized skills in specific industry areas. This situation is termed as **Skills Shortage.**

iii. An increase in supply in a particular area as against demand of skills in another area at any given time. This is known as **Skills Mismatch.**

2.3.6 Skill gaps

According to Shah and Burk (2003, p.19) skills gap is 'a situation where employers are hiring workers whom they consider under-skilled or that their existing workforce is under-skilled relative to some desired levels'. The definition by Shah and Burk (2003) is similar to the one by Strietska-IIina (2008, p.8) who noted that skills gaps exists where 'employers feel that their existing workforce have inadequate skills types/levels to meet their business objectives'. Strietska-IIina (2008, p.8) further states that skills gaps 'are used to describe the qualitative mismatch between the supply or availability of human resources and the requirements of the labour market'. Finally, according to Gambin, et al. (2016, p. 85) skills gaps are existing employees who lack the skills required in order for the company to meet its product market goals." Thus, the consensus in literature review of the definition of skills gaps is that skills gaps occur when an employees' performance or competency level is not at a required level in relation to a specific task or job expectation.

Globally, research on skills gaps has shown that a large proportion of firms are experiencing skills gaps. According to the World Bank's enterprise survey of 2010, 27% of firms surveyed in the world cited labour skills levels as a major concern and that these concerns are considerably higher for those who export. Although, most people assume that skills gaps are higher among the less educated, the skills gaps are not only confined to non-tertiary students, it also includes graduates of Tertiary Education. As one researcher put it 'There are significant skills gaps coming out of tertiary education in many countries around the world as evidenced by a 2007 McKinsey Global Institute study' (Aring, 2012, p. 5). The Global survey by the Manpower Group in 2011 reported the percentage of employers all over the world who

are experiencing difficulties in filling vacant positions in their various organizations as in shown Table 2.12.

Table 2.12: Global Manpower Group Survey 2011

Country	**Percent of firms identifying labour skill level as a major factor in productivity**
Japan	80
India	67
Australia	54
United States	52
New Zealand	44
Singapore	44
Germany	40
Global	34
Italy	29
Canada	29
China	24
United Kingdom	15

Source: Aring (2012, p. 4)

Based on the report, about 34% of global firms identified skills levels as a challenge. In the advanced countries challenges with skills levels were quite high in places such as the U.S (54%), Germany (40%) and Japan (80%). The World Bank enterprise survey 2010 also shows a similar trend for most developing countries around the world (see Table 2.13).

Table 2.13: Custom Report Produced from World Bank 2010 Enterprise Survey

Country & year of research	**Percent of firms identifying labour skill level as a major factor in productivity**
Brazil 2009	69
Russian Federation 2004	57
Egypt 2008	50
Colombia 2010	38
Costa Rica 2010	38
Jordan 2006	33
Botswana 2010	32
China 2003	31
Morocco	31
India 2006	14

Source: Aring, (2012, p. 4)

With regard to causes and solutions to skills gaps, most researchers believe that there is a dis-connect between formal education and the needs of the labour market in general. According to Aring, (2012, p. 6) 75% of firms in the UK indicated in a survey that, the British educational system does not adequately prepare young people for the world of work. Additionally 59% of firms also think that the educational system is poor at developing the entrepreneurial skills of young people (Young Enterprise BlogSpot, 2018).

According to Winterbotham et al., (2014), the Employee Skills Survey 2013 reported that 47 percent of employers admitted they had employed staff whose skills were under-utilized. This trend was most experienced in the small-scale business sector where 30 percent of staff are over-qualified and over skilled. The survey shows that in the hotel and restaurants sector 60 percent indicated skills under-use, while 24 percent indicated over-qualified and over-skilled staff. In Public Administration, nine percent reported staff over-qualification and over-skilled, while manufacturing recorded 10 percent (Gambin et. al, 2016). The ESS 2013 defined an under-used employee to be 'if the employers report they have both more skills and more qualifications than are required to perform the job role they are currently in (Winterbotham et al., 2014, p.6).

When asked why vacancies in their firms were hard to fill, 33% of employers in Cambodia were of the view that the number of applicants in the country with the required skills were low, while 14.1% of the applicants lacked the qualifications they demanded (Bruni, Luch, & Kuoch, 2013, p. 48). The situation seems to be the same in Brazil where, according to a Global CEO survey undertaken by Price Waterhouse Coopers, 76% of employers surveyed cited lack of qualification as a concern. Brazil's Educational System was also cited as a major contributing factor to the problem: 'The

nations educational shortcomings are leaving many Brazilians on the sidelines. More than 22 percent of the roughly 25million workers available to join Brazil's workforce this year were not considered qualified to meet the demands of the labour market, according to a government report in march. 'In certain Cities and States we have a problem hiring workers, even though we do have employment' said Marcio Pochmann, president of the Institute for Applied Economic Research, the government agency that produced the March report. 'Earlier estimates showed that tens of thousands of jobs went unclaimed because there were not enough qualified professionals to fill them.' (Aring, 2012, pp. 5,6).

The situation in Egypt in-terms of education seems to be different, compared to Brazil. Here prospective employees seem to be well educated. Diego & Semlali (2010) found that Egypt's share of working-age population with university education has gone up considerably in the years 1998 to 2006. However, the unemployment situation in Egypt seems surprisingly high according to the Human Development Report on Egypt by the United Nations Development Program [UNDP] (2010) puts the unemployment rate in the country for people within the age bracket of 15-29 at 60.1 percent (UNDP 2010). The report further states that as of 2006, 80 percent of the unemployed were below the age of 29 years and 82 percent of the people who were unemployed had never worked.

The Egyptian situation brings to the fore the debate in the United States, which seems to paint a picture that contradicts several reports on the global skills gap discussion. While most employer based surveys, seem to suggest that there is a skills gap problem, some researchers and academics seem to think otherwise. Vaisey (2006) did an assessment of educational qualifications and compared it to qualifications required by employers in the job market, as against the U.S. Department of Labour's O*NET job

classification system, to define job requirements. Results showed over qualification for job applicants with the trend going up in recent years. A further study on this was also done by Liu and Grusky (2013). The researchers used the US Current Population Census from the 1970s to 2013 as representative of jobs in the economy. The Department of Labour's O*NET database was then used to capture the skills associated with each job. Results showed modest increases in skill requirements over the past 40 years. Academic skills, for example, went up only by 4% with computing skills going up by 8% (Cappelli, 2015, pp. 265, 266). Schmitt and Jones (2012) in a CEPR paper documented how some jobs in the US economy had potentially become as they described 'bad jobs' a trend they indicate has seen a growth since the 1970s. 'Between 1970 and 2010, the share of workers with bad jobs, by our definition, increased for workers at every education level... [which is] hard to reconcile with the view that higher reward for education and related skills is driving poor labour market outcomes' (Levine, 2013, p. 24).

In a research focused on the Wisconsin-Milwaukee area in the United States Levine, (2013) found that the disconnect argument (i.e. the Disconnect between the labour market and the educational system) is largely untrue. 'All told, of the estimated 103,400 total annual openings projected to occur through to 2020- through job growth and worker replacements, over 70 percent require a high school diploma or less and 64 percent requires short-to-moderate terms on the job training, by way of education and training requirements. This trend does not appear to be a harbinger of a widening skills gap: the jobs of the future do not appear to be beyond the current educational attainment of the Wisconsin workforce' (Levine, 2013, p. 32). Levine (2013) goes on to quote several experts in the field to substantiate his claim;

- "We are not suffering from a shortage of needed skills; we're suffering for a lack of policy resolve…[s]structural unemployment is not a real problem, it's an excuse' not to pursue 'government action on a sufficient scale to jump-start the economy" (Paul Krugman (2010), Nobel Prize Winner in Economics).
- "Believing that workers do not know how to do jobs right is easy to grasp and, on its surface, easy to remedy: everyone gets more education and training" (Barbara Kiviat (2012), PhD candidate, University of Harvard).
- "Even high skilled people with job experience of two decades languish among the unemployed. Whole industries are being scaled down by automation, the shifting of work overseas, and the recession" (Peter Goodman (2010), Editor – International Business Times).
- "Training does not create jobs. Jobs create training. And people get that backward all the time. In the real world, down at the ground level, if there is no demand for magic, there is no demand for magicians" (Anthony Carnevale (2012), director, Georgetown University).
- "The unemployment rate is higher now, not because skills available are less in line with skills desired than they were in the past, but because unemployment rates are higher generally across all industries and occupations". (Edward Lazear (2012), Professor, Stanford University).
- "If skills are supposedly an increasingly important consideration for businesses, including manufacturing, why are companies like auto manufacturers and others choosing to locate plants in places like rural South Carolina, Tennessee, and Alabama- states with among the lowest test scores and levels of educational investment" (Michael Handel, (2005), Associate Professor, Northwestern University)

With regards to skills gaps in Ghana, some skills research has been published that have made conclusions about the garment industry in general. In a report by The Youth Employment Network and International Youth Foundation (2009), private sector demand for youth labour in Ghana was examined. That research surveyed about 350 Enterprises across key sectors in the two largest cities of Ghana: Accra and Kumasi.

The result showed that the highest ranked minimum skills required by enterprises in the textiles and garment sector to employ people were literacy skills, a degree certificate, years of experiences and working age. Although the study did not explain the reasons why those factors were ranked higher, the ranking provides some indication about skills requirements regarding generic and job specific skills. The indications are that literacy skills are considered as an important generic skill when seeking employment and also for job specific skills, a degree certificate, working age and years of experience are critical. Indeed literacy skills and job specific skills were also rated as barriers to youth employment and so their importance to the enterprises cannot be over emphasized (The Youth Employment Network and International Youth Foundation, 2009).

The study also reported the challenges of the youth who were already employed. In the textiles and garment sector, professional maturity and personal maturity were reported as the major challenges of the employees. Since professional maturity and personal maturity are generic skills, the difficulty with them once again implies a lack of attention for skills during the acquisition of training or education (The Youth Employment Network and International Youth Foundation, 2009).

Another report that made specific findings on labour skills in the garment industry was the ‘Study, Promotion, and Development of Local Firms in the Republic of Ghana’ by JICA (2008). The report both explicitly and inexplicitly recognized labour skills as part

of the problems in the garment sector. For instance, under the section 'finishing of the product is poor', one of the observations was that 'SMEs cannot create original designs' which is a tacit recognition that skills in creating original designs may be lacking (Figure 2-2). Similarly, under the section 'Low productivity causes the low competitive price of the product' it was noted in the report that the 'levels of management skills are low' and 'entrepreneurial skills are lacking' as another recognition that challenges in labour skill exist in some key areas, thus, confirming the fact that overall there are challenges with labour skills in the garment industry of Ghana.

Finally, the review of literature revealed there was no specific research that provides a definitive comparison of labour skills in Ghana to other competitive countries regarding garment construction. However, in a Wall Street Journal Article about labour skills in Ghana and how these compare with competitive countries in Asia, Hinshaw (2012) noted that skills levels of Ghanaian labour were not on par with counterparts in Asia and Latin America. He made the observation when he reported on how Ghana was becoming a global destination for manufacturing clothes but admitted that 'first, though, the crew of self-taught needle workers needed master mass production' implying that some skills in mass production were lacking.

2.3.7 Skills shortage

In perusing literature on skills shortage, it was obvious that most authors had the same or similar definition of skills shortage. According to Shah and Burk (2003, p.4)

> *"... skills shortages from the microeconomic perspectives are generated from 'excess demand' and the ability of employers to switch their demand composition or substitute factors of production (e.g. sourcing labour from different locations or sectors) in the short term due to asymmetric information on applicants' ability, or due to vested interest in hiring decisions that could lead to risk aversion and hence skills shortages".*

This definition is similar to Mok, Geoff, Stevens, and Timmins, (2012, p. 6) who defined skills shortage as 'Shortage of staff in the labour market with appropriate skills' and Frogner (2002, p.18), who also wrote that 'Skills Shortages are deficiencies within the labour pool, which created problems in recruiting new staff caused specifically by a shortage of individuals with the required skills in the accessible labour market'. In addition to those definitions, Strietska-IIina (2008, p.8) also refered to skills shortages as a lack of available skilled people, which results in recruitment difficulties.

With regards to causes and solutions to skills shortage, there exists some contention between experts, researchers, employers and employees as to what qualifies to be described as skills shortage. This contention seems to have some experts, researchers and most employees on the one side against employers on the other side.

I. Wages

Most experts and researchers insist that a significant number of the shortages, as reported by employers, can really not be said to be shortages, because they are due to the refusal of employers to raise wages. Healy, Kostas, & Sloane, (2011, p. 3) contend that a case in which an employer is unwilling to pay a higher or acceptable wage in order to curb skill shortage in an organization should not or cannot be considered to be skills shortage. Their reason stems from the fact that the shortage being alluded to by the employer is self-caused or self-inflicted due to the employer's refusal to raise wages to attract more qualified personnel which will in turn keep demand and supply in the balance. However, in Australia, researchers found that raising wages in one area of an organization or industry has the potential to spread to the entirety of the same organization or industry and that this might have inflationary consequences. Many people ask, 'if raising the wage solves the shortage problem, why are employers so

reluctant to do so?' Mok, et al. (2012, pp. 8, 9) explain, with two reasons, why this might not be so simple for employers to do:

i. The fact that the company or firm cannot afford to raise wages is mostly due to issues of productivity associated with the firm.

ii. The fact that supply of skills to the labour market takes a longer period to adjust the period for changes in wages to influence changes in skills acquisition is mostly longer.

Haskel and Martin (1993a) in using the UK's 1984 Workplace Industrial Survey (WIRS) found that unionized companies and other institutions offering profit-related remuneration suffered less skills or labour shortage compared to the others. They also found that the firms that suffered higher skills shortages had not raised wages to attract more qualified personnel to curb the shortage, although the shortages did diminish when local unemployment was higher (Healy, Kostas, & Sloane, 2011, p. 5).

In a 2013 Manpower Group Survey (Manpower, 2013), U.S. employers observed 20% of their applicants were not ready to accept the wages being offered for the various positions they had applied for, and yet only 5% of the employers surveyed were planning to raise wages in order to curb the skill shortages they had in their firms. This was particularly interesting, because employers indicated in the same survey that the 10 most difficult vacancies to fill were those which really required no specialized skills as such. Some examples of such hard to fill-vacancies or jobs are labourers, production operators, factory hands, secretaries/administrative assistants and so on (Cappelli, 2015, p. 261).

Levine (2013), after examining various research materials and data, especially from the U.S., Wisconsin and Milwaukee area, found no evidence to support many of the claims

made by employers and even some major institutions and experts in respect of skills shortages. It was discovered that if Wisconsin employers, for example, were facing skills shortages, wages would have been going up, but wages in the area have rather gone down since the year 2000, while states such as North Dakota and Wyoming, that have real demand for skilled labour because of the boom in the energy sector have seen a double digit increase in wages since 2000. In Wisconsin the average working hours were down by 4.3% since the year 2000 compared to other states with very tight labour market, such as North Dakota (Levine, 2013, p. 4)**.** It is obvious from the above that one of the most critical solutions to the skills shortage problem has to do with how institutions or firms deal with wages. Rosenthal (1982) recommends a perfect solution to employers who face such wage related skill shortages. He suggests that they must 'raise their wages, train more to develop talent internally, or substitute technology for labour to reduce their demand' (Cappelli, 2015, p. 274).

II. Recruitment cost and delays

Shortages are likely to occur because of the long period and sometimes cumbersome processes companies have to go through in order to recruit the right or qualified personnel for the openings in the firm. From HR developing the criteria for the selection, advertising the position, waiting for applicants to search and apply, taking calls from potential applicants and receiving applications, put in place an interview panel, shortlisting applicants and choosing the qualified applicants and finally induction/sometimes in-service training to enable the applicant fit in and perform specific tasks. These procedures obviously take time and some considerable financial resources to carry out (Mok et al., 2012, p. 8). It is also very important to take into account the financial loss a company suffers while waiting to fill a vacancy. The time period and its associated costs are likely to be less or lower in a bigger labour market

environment than in a smaller one, because the many vacancies become easy to fill in a bigger labour market environment (i.e. many vacancies are easily matched with many applicants) (Mok et al., 2012, p. 8).

In order to overcome recruitment problems, employers must find and adopt a solution that is able to tackle the problem in all fronts (i.e. a solution that cuts down considerably the waiting time, that finds the appropriate applicant to fill the vacancy and most importantly: cut down cost). Sometimes the solution does not lie in the willingness of the firm to recruit from the labour market but rather to focus on developing in-house strategies that is capable of enhancing the skills level of their employees. Gambin et al. (2016) suggest that firms can develop work-around strategies to make up for not having the full complement of skills. These work-arounds include:

- ✓ Requesting existing employees to take on more work;
- ✓ Using employment agencies to fill vacancies;
- ✓ Using social networks to find potential recruits;
- ✓ Using ex-employees to fulfill tasks;
- ✓ Outsourcing work to other companies.

(Gambin et al. 2016, p. xi)

III. Competitive labour market and firms' ability to retain skilled labour

It is true that a large labour market provides opportunities for both applicants and firms (Mok et al. 2012, p. 8). Many job seekers are attracted to this particular market in search for not just jobs, but well-paid jobs: employers also have it easy matching their vacancies with job seekers because of the larger labour market size. However, the firm's ability to provide enough incentives to maintain their employees becomes an issue that needs to be given serious attention. In a competitive labour market, firms are looking to hire staff with the requisite skills to drive productivity, and employees will also be

scouting around to find companies with better remuneration packages. This is likely to cause a situation in which non-competitive firms will find it difficult to maintain qualified staff and therefore loose these employees to very competitive firms in the labour market chain (Mok et al. 2012, p. 9). Also, because the firms in this competitive labour market are equally in competition for customers in the same product market, they demand the same staff skills from potential employees thereby potentially causing poaching. The resultant effect of poaching in this case is that firms become disinterested in making investments in training their staff.

> *"Market competition (at the product level) increases the probability of reporting skill shortages. The reference category is firms without a competitor in their market. Firms with one or two competitors are 13 percent more likely to report skill shortages, while firms with three or more competitors are only marginally more likely to do so, at 13.9 percent"* (Healy et al. 2011, pp. 14,16).

Gambin et al (2016) encouraged companies and institutions faced with this problem to train their workforce through, for example, apprenticeship to acquire unique industry skills which enabled them to be very competitive in the labour market. They contend that when employees have such unique industry skills which in turn increases their market value, a non-training employer who comes to recruit them will be faced with having to pay a higher market price for them. 'In this way the risk faced by the employer investing in apprenticeship is reduced (Gambin et al. 2016, p. xii).

IV. Inadequate training opportunities

With regards to inadequate training opportunities, the central question, off course is 'who should pay for the cost of training'? - or who should take the higher cost? The obvious reluctance by the players (employers, employees and the state) to invest in training staff internally, externally or engaging people in apprenticeship for them to gain the skills to meet the requirements or demands of the job market has been noted

as a major cause of the skills shortages being faced in many firms (Abor & Quartey, 2010). The firms that do not provide such training opportunities obviously site financial constraints as being the reason why they are unable to do so. Consultancy firm Accenture, conducted a survey on U.S. employees in 2011 in which it found that only 21% of U.S. employees had received employer-provided formal training in the previous five year period. Even in firms where such opportunities are provided, an in-house bureaucratic barrier makes it sometimes difficult to effectively or efficiently match such training to changes in skills demands in such institutions themselves. The extent to which such a skills training system is able to deliver, in time to fill an immediate vacant position in the organization is also a matter of great concern (Mok et al, 2012, pp. 13,14). Craft-based skills whose main source is apprenticeship have also not received enough attention in the United States. The Department of Labour registered 33,000 apprenticeship programmes in 2002, but this figure had dropped considerably to 21,000 in 2012. The number of apprentices also dropped from 500,000 in 2003 to approximately 280,000 in 2012. Meanwhile, the about 50,000 apprentices that graduate every year are very few compared to the U.S. workforce of about 160 million (Cappelli, 2015, p. 278). According to the OECD (2012:4) the U.S. Department of Labour has since 2004 pushed to identify and register more apprenticeship programmes. This could in fact suggest that if the rate of registration is going up, then the decline in real apprenticeship programmes is likely to be greater than the data quoted above. The solution to the problem here does not come easy. Gambin et al. (2016) propose two strategies to deal with the problem.

1. **Lower skills demand level**: at this level employers who are struggling to meet demand for skills in their organizations must be willing to use external vocational training systems to acquire those skills. They also need to be

convinced that when they raise product market ambitions for their workforce, they must be seen to be doing so along with the skills base of their employees and when they indeed raise such ambitions, the external Vocational Education Training (VET) system will be able to deliver the requisite skills.

2. **Intermediate skills demand level**: This is a critical point where skills are in real demand. Employers must invest substantially in apprenticeship and other training programs to meet the demand for such skills especially because of their peculiar nature and concerns about meeting their specific, unique skills needs and being able to retain apprentices after they have completed their training. This goes a long way to reduce the risk employer's face in investing in apprenticeship programmes (Gambin, 2016).

2.3.8 Skills supply for garment production

As far back as 1994, a UNDP report on Ghana's Human Resource Capacity noted that,

> *"At this threshold when Ghana should get ready to enter the 21st century, her human resource capacity and utilization gives cause for concern. The quality, quantity, degree of utilization, levels of performance/productivity, attitudes to work, standards of husbandry, supply and demand relationships of critical, high-level skills …need to be improved upon."(p.109)*

The government of Ghana indeed took steps to address skills gaps and shortages in the manufacturing and service firms using educational reforms and supporting industry specific initiatives (Government of Ghana, 2002). In 2004, following a review of the educational system, the Council for Technical and Vocational Education and Training (COTVET) Act, 2006 (ACT 718) was established. This was to regulate all Technical Vocational Education and Training (TVET) related activities in Ghana and to promote a skill-based TVET system of education as an alternative to the general education system, perceived as lacking industry-ready skills (Government of Ghana, 2006). In

line with that, COTVET introduced the Competency Based Training (CBT) in the TVET sector starting with the Technical Universities, so that TVET education could focus on practical-skills-acquisition for graduates to fit industry skill needs and standardize teaching and training for the TVET sector (Government of Ghana, 2006).

For purposes of discussion, skills supply in the garment industry in Ghana is discussed under three broad outlines:

- Skills supply from non-tertiary TVET providers
- Skills supply from tertiary TVET providers
- Programmes-assisted skills supply supported by government and non-government agencies.

Skills Supply from non-tertiary TVET providers

According to Baah-Boateng and Baffour-Awuah (2015) government recognizes five of such TVET providers and these are:

i. The formal public institutions such as the National Vocational Training Institutes (NVTI), Ghana Education Service (GES) and Youth Training providers such as the Youth Employment Programme (YEA)
ii. Formal private not-for-profit Technical and Vocational Skills Development (TVSD) providers facilitated by various faith-based organizations and NGOs
iii. Formal private for-profit TVSDs with a variety of private vocational training schools which has profit making goals as part of its objectives
iv. Informal not-for-profit providers run by churches, NGOs, and Philanthropies
v. Informal for profit providers run by master craftsmen

These TVET providers supply the highest numbers of skills, not only for the garment industry but most of the manufacturing sectors of Ghana as well. According to Palmer

(2009), these institutions provide about 80 – 90% of all basic training skills in Ghana. The rest are provided by public training institutions and non-governmental organizations.

However, there are challenges with the level of administrative oversight on these TVET providers to guarantee the quality of skills supply. Legally, a guarantee of quality and supervision of these TVET providers and their training was supposed to have been regulated and controlled by the NVTI under a legislative instrument (LI) No. 1154, but due to failure of the NVTI to regulate the sector, Informal Sector Associations (ISAs) such as Dressmakers and Tailors Associations were instead providing that supervisory and training oversight and sometimes issuing their own certificates (Palmer, 2009). Meanwhile, the Informal Sector Associations themselves lacked proper structures to carry out supervisory and quality assurance related tasks (Palmer, 2009). Apart from inadequate oversight, other challenges relating to poor perception, administration, financing, relevance, organization and incongruence, among others, have resulted in a situation of unfulfilled outcomes for most TVET graduates (Forster, 1965; World Bank, 1991; King, 1992; Fluitman, 1999; Oketch, 2007). This is a situation that is often referred to as 'Vocational School Fallacy' (Forster, 1965).

Clearly, although these TVET providers probably supply an adequate number of workers for the garment industry (about 80%), these workers are probably semi-skilled or unskilled due to poor oversight on the quality of their training. We refer to the observation by Hinshaw (2012) that Ghanaian workers were slower and less skilled in garment making compared to their counterparts in Asia. Data from the Ghana Statistical Service (2016) showed that nearly one-quarter of people in the small and micro firms

were unskilled could be attributed to consequences of poor oversight or quality assurance by the Informal Sector Associations.

Another research that has also looked at skills levels concerning non-tertiary skills provision in Ghana, but not specifically to the garment industry, was a study by Baah-Boateng and Baffour-Awuah (2015) that examined skills development and challenges based on education and training levels, enrolment and courses pursued. Overall, their report noted that there were skills gaps and shortages in the national economy. Specifically, they observe that skills levels among the working-age population were quite low based on the fact that roughly three out of every 10 Ghanaian of working age had no formal education or at best a preschool education while about five of every 10 working age individual had primary or Junior High School Educational skills level.

Furthermore, according to research by Baah-Boateng and Baffour-Awuah (2015), among the working-age population who accessed Formal Tertiary Education to obtain high skills, a disproportionate number chose Social Sciences/Humanities courses as compared to industry specific courses like Fashion, Engineering or Medicine resulting in a strong demand for a semi-skilled and skilled workforce in firms and an oversupply of skills in the humanities. Baah-Boateng and Baffour-Awuah (2015) concluded that with about 88% of Ghana's labour force in the informal sector with low-level skills, such a low-skilled labour force face the high prospect of employment vulnerabilities and may not be able to take up opportunities in the formal economy where a degree or Tertiary Education is required.

Skills supply from tertiary institutions

At the Tertiary level, skills, training and acquisition were undertaken in garment making under different programmes (Fashion Design/Clothing and Textiles/Home

Economics/Family & Consumer Sciences) in the polytechnics, public universities and private universities as shown in Table 2.14.

Table 2.14: Supply of Tertiary Level Skills, Ghana

S/N	Institution	Certificates Issued	Program
1.	Accra Technical Univ.	B.Tech, HND	Fashion
2.	Ho Technical Univ.	HND	Fashion
3.	Takoradi Technical Univ.	HND	Fashion
4.	Kumasi Technical Univ.	B.Tech, HND	Fashion
5.	Cape Coast Technical Univ.	HND	Fashion
6.	Tamale Technical Univ.	HND	Fashion
7.	Sunyani Technical Univ.	HND	Fashion
8.	Univ. of Ghana	BSc, MPhil, PhD	Family & Consumer Sciences
9.	Univ. of Cape Coast	B.Ed, MPhil	Clothing and Textiles
10.	Univ. of Edu. Winneba	B.Ed, BSc, M.Tech, MPhil	Fashion, Home Economics
11.	KNUST	Bachelor of Arts	Fashion
12.	Radford Univ.	Bachelor of Arts	Fashion
13.	Joyce Ababio College of Creative Design	Bachelor of Arts	Fashion
14.	Blue Crest Univ. College	Bachelor of Arts	Fashion

Source: Author's Construct. (2017)

Graduates from these tertiary institutions are trained in fashion to provide the needed skilled labour for the garment industry at a high level of competence, but there is no data to determine the number of graduates supplied into the industry per programme, and likewise no data from the garment industry to establish the demand for skills in the garment industry. Hence the data on supply and demand dynamics (including possible mismatch) of skills supply from tertiary institutions for the garment industry in Ghana is non-existent. This has implications on skills shortages and as noted by Morris and Reed, (2008). It affects business efficiency and productivity. Not knowing the skills supply and demand dynamics makes it difficult to plan, identify sector skills problem and address them.

As noted in Table 2.14, there is no Clothing and Material Sciences programme or Management programme that focus on operational performance and production organization. Most of the programmes, as seen in Table 2.14, focused on the thematic areas of design, pattern and garment construction. Whenever garment programmes were mounted, the three thematic areas are done. There are no specializaton unless short courses are mounted which emphasizes specialisation beyond the three thematic areas. Given the level of competitiveness in the global garment manufacturing industry, which focusses on production and organization advantage, the absence of such programmes at the undergraduate or post graduate level has implications for the availability of such expertise in the industry.

Furthermore, a study by Boateng and Ofori-Sarpong (2002) about Tertiary graduate supply and demand mix noted that the choice of programmes at the tertiary levels was not on request by government nor by the private sector resulting in over supply of skills in some areas (Arts and Social Sciences) and an under supply of competencies in others (Medicine and Health, Technical, Engineering, and Administration). Regarding skills gaps, they also note that there were skills gaps even among tertiary students who had pursued job specific Vocational courses due to difficulties in curriculum delivery resulting from poor infrastructure and lack of instructors/teachers among others. Thus, they noted that tertiary graduates with job specific qualifications lacked readily available skills that firms could tap. Hence, most companies often spent some amounts of money and time to retrain them for their tasks.

Skills supply by other government and non-government agencies.

Apart from the TVET programmes and tertiary skills supply, there were support-based institutions that assist firms wishing to upgrade skills in their businesses. Given that not

all skills training was school based, and most employers might not be willing to allow workers to leave the work environment to train outside, the opportunity existed for manufacturing firms, including garment companies, to seek on-site training for their employees. This research did not come across any known database of the exact number of such support based firms. Hence the few identified are presented in Table 2.15

Table 2.15: Skills Supply by Governmental and Non-Governmental Agencies

S/N	Skills Agency	Status	Type of skills
1	Skills Development Fund (SDF)	Governmental	Job Specific
2	National Youth Authority (NYA)	Non-governmental	Job specific
3	Ghana Skills Development Initiative (GSDI)	Governmental	Job specific
4	British Council Skills Hub	Non-Governmental	Generic Skills
5	Gratis Foundation	Governmental	Job specific
6	Integrated Community Centre for Employable Skills (ICCES)	Government	Job Specific
7	Opportunities Industrialization Centre International (OIC)	Non-Governmental	Job Specific

Source: Author's Construct (2017)

According to a report by the Skills Development Fund (2016), most of these support based agencies did one or the other of the following:

- Upgrading skills of employees to improve productivity and adopt emerging technologies
- Enabling employees to earn certificates in their vocational training
- Upgrading and training of Master Craft persons and Self-employed graduate apprentices
- Providing industrial attachment opportunities
- Retraining of workers based on economic or organizational restructuring

Based on the depth of coverage and activities, the Skills Development Fund (SDF) is the most prominent of the institutions as shown in Table 2.15. According to the Skills Development Fund (2016), it has supported over 510 small, medium and large scale firms, academic institutions, cooperative groups and government functionaries among others with over ₵87 Million Ghana Cedis since 2011. Some of those institutions

include garment-manufacturing companies that sought funding to upgrade skills in pattern making, sewing techniques, draping among others (Skills Development Fund, 2016).

Although the initiative by these support based agencies, is in the right direction in supplying and upgrading skills, there are some limitations on their ability to address skills gaps and shortages in the garment or other manufacturing sectors. For instance, most of these agencies were only limited to short and medium skills training of workers to bridge skills gaps and not for academic or high professional courses (Skills Development Fund, 2016). This means that training that involves academic studies to acquire skills or to attain senior management level vocational qualifications are unsupported. In the garment industry, such a limitation as noted in Figure 2-2, where it was reported that 'level of management skills is low', the agencies may not help in addressing such skills gap.

Another limitation about the agencies is that, based on their core mandate that focusses mainly on vocational or technical expertise, it is hard to imagine them supporting the training of generic skills. This is because generic skills, unlike vocational skills might not be tangible with the immediate physical result, even though its absence can affect competitiveness or production. With such a limitation it is difficult to imagine them supporting 'professional and personal maturing' which a study by The Youth Employment Network and International Youth Foundation, (2009) has identified as the highest ranked challenge of persons employed in the garment industry.

Apart from those limitations, there are other challenges peculiar to the garment industry where a low level of education is predominant in the informal sector (Baah-Boateng & Baffour-Awuah, 2015). With such low levels of education, it might deter such garment

manufacturers from accessing some of the facilities like the SDF due to difficulties relating to their inability to read, understand and produce proposals in support of their applications. Such a challenge, however, might not apply to medium and large scale exporting firms that competently handle such application processes.

Again, the nature of governmental and non-governmental skills based support in Ghana, is such that unlike the South African Education and Training Authority (SETA) which requires that manufacturing firms contribute skills levies for training and upgrading purposes, skills support agencies depend mostly on government and donor support (Skills Development Fund, 2016; Morris & Reed, 2008). Therefore, unlike SETA, where contributions by firms guarantee adequate funding, income from the support-based agencies might not necessarily be available, adequate or reliable because the government does not always provide funds on time or at all. Thus, the challenge of funding and the sustainability of such programme-assisted skills supply is questionable.

Furthermore, the extent to which firms are involved in such programme-assisted initiatives with government affects the perceptions of such programmes and their roles in addressing skills supply. In South Africa, for example, SETA is an industry-based initiative that works with Government Agencies and Department. Hence, a sense of ownership from both industry and government provides opportunities for both parties to have a role in the functions of such programmes (Morris & Reed, 2008). This is a situation that is entirely different with the skills support agencies in Ghana.

2.3.9 Focus of skills training (skills mismatch)

The skills supply in Ghana's labour market mostly comes from non-tertiary skills providers, tertiary level training institutions and from programme-assisted skills suppliers assisted through government or non-governmental agencies. However, from

the perspective of understanding skills gaps, shortage and competence, it is important to outline the focus of the skills training by indicating whether or not the skills that are needed in the various skills categories are taught or not. This is to enable the study ascertain a possible skills mismatch which could be a contributing factor to skills gaps, shortage. Based on the review of skills providers (See section 2.3.8), Table 2.16 presents the focus of skills training among the skills providers, which are traditional apprenticeship, non-tertiary and tertiary.

Table 2.16: Focus of skills training among the sources of skills providers in Ghana

	Sources of skills supply		
Skills Category	**Non-tertiary skills providers**	**Tertiary level skills providers**	**Programs-assisted skills suppliers**
Ironing/Pressing	Yes	Yes	No
Production Management	No	Yes	No
Fit Model/Sample making	No	No	No
Pattern/Fabric Cutting	Yes	Yes	Yes
Machining/Sewing	Yes	Yes	Yes
Fashion Design	No	Yes	Yes
Pattern making	Yes	Yes	No
Quality assurance	Yes	No	No
Repair of machines	No	No	No
Computer aided applications	No	No	No

Note: 'Yes' means the skills category is taught as a course, or there is an opportunity for a learner to specialise in those skills as part of the training programme. **'No'** means the skill category is not taught or no opportunity exist for learners to specialise in that skill.

As seen in the Table 2.16, it is obvious that with regard to the various skill categories the skills providers did not teach or focus their training in respect of all the skills categories needed by the garment firms. Instead, most of the skills suppliers focussed

on selected skills mostly in machining, pattern making and sometimes designing. These therefore, have implications on the extent to which such skills are available in the labour market and how the focus of skills training, as currently undertaken, matches with the needs of the garment industry.

2.4 Competitive advantage of firms in the garment industry

A number of definitions have been offered in an attempt to describe the concept of competitiveness at the organizational level adequately. These definitions are very similar in their outlook and seem to highlight the same ideas. Notable among these definitions is one the given by D'cruz and Rugman, (1992) that defined Firm Level Competitiveness as 'the ability of firms to design, produce and or market products superior to those offered by competitors, considering the price and non-price qualities'. This definition is similar to that which was offered by Sanjaya, (2001) who also defined it as a firm's 'ability to do better than comparable firms in sales, market share, or profitability'.

Central to these two definitions is the idea that competitiveness involves possessing a quality or ability that gives a comparative advantage over others. Porter, (1990), in his definition, limits these comparative advantages to one of two things. Either the lower cost of a firm's goods and services as compared to others, or the uniqueness of their product or service offer that sets them apart from the competition. He states that 'competitiveness at the organizational level is productivity growth that is reflected in either lower costs or differentiated products that command premium prices'.

The garment industry is a very competitive industry, primarily because it is a low concentration industry with low entry barriers. According to Kunz and Myrna, (2011), almost every country has some form of trade in the garment sector. Therefore, there is

product proliferation in the International markets. Product proliferation has been enhanced by the technology of producing textiles, cheap labour, favourable global trade policies and automation in some production processes, among others (ILO, 2015; U.S. Council on Competitiveness, 2016).

In the garment industry, manufacturers and retailers have been competing mainly on two fronts: low-cost strategy and product differentiation (Kunz & Myrna, 2011; USITC, 2004). The low-cost strategy involves sourcing goods and services from the cheapest facilities in the world so that prices of the retail garments are lower than the competitors'. A global research report by IBISWorld Inc. in 2009 noted that one of such areas for cost cutting was wages. Indeed, the cost of wages decreased globally from 21.0% in 2003 to 18.4%, as companies continued to seek manufacturers from countries with low labour wages (IBISWorld Inc., 2009).

Wages are always targeted for cost cutting measures because the apparel manufacturing industry is highly labour intensive and salaries constitute a significant part of the production cost (Table 2.17). Hence, most apparel manufacturing firms' source from countries with low wages. However, according to Dickerson (1999), the low price strategy adopted by most of the garment firms has a number of challenges, including lower margins, lack of customer loyalty, an increase in product imitation and low profitability.

Table 2.17: Cost structure in the garment industry worldwide

S/N	Item	%
1	Purchases	52
2	Wages	18.4
3	Other	15.9
4	Profit	6.8
5	Utilities	2.5
6	Rent	2.3
7	Depreciation	2.1

Source: IBIS World Inc. (2009)

The second competitive strategy often used by the garment firms is product differentiation. The concept of product differentiation is based on the teachings of Porter (1990) who defined differentiation as an attempt to create a product or service that is perceived by the customer and/or industry as unique and with superior attributes of value. Thus, primarily product differentiation involves using a combination of services and techniques to set the producers apart from their competitors.

Such differentiation techniques, according to Barney (2002), could include product features, linkages between firms, timing, location, product mix, links with others and reputation. In the garment industry, most of the product differentiation strategies are leveraged through branding (Barney, 2002). Unlike the low-cost strategy, branding offers some advantages that include customer loyalty, larger margins, increased communication efficiency, licensing opportunities, and favourable brand extension (Keller, 1998).

Whichever competitive strategy a garment company adopts, quality of skills is important to initiate, sustain and implement as a competitive strategy. The availability or otherwise of skilled labour has a sizeable impact on the competence and competitiveness of firms. Skilled labour affects a company's ability to attain optimum levels of productivity, implying that its absence reduces the ability of firms to innovate in response to changing market factors which are a significant leverage that firms require to compete and grow. Competition and a skilled labour supply are two main factors that have significantly affected the output and profitability of firms in the 21st century and have therefore influenced the changes in the structure of firms under the umbrella of globalization (Morris, 2007; ILO, 2015).

A critical relationship between skills and firm competence could be identified. As technology and the need to remain competitive in rapidly evolving global markets push firms to adopt the most innovative and cost efficient production processes, the availability of a skilled workforce to generate and run such innovative processes becomes more and more important to firms that wish to maintain or improve their competence. This trend appears to have been already understood, primarily in the global manufacturing sector in which the conditions described above were already a reality.

In the Global Manufacturing Index (2016), researchers from Deloitte Touche Tohmatsu Limited and the Council on Competitiveness asked CEOs in the manufacturing sector to identify the most competitive countries in the manufacturing industry and also to identify the most important drivers of manufacturing competitiveness. The most important factor listed was 'Talent.' The researchers defined talent as 'the quality and availability of highly skilled workers who facilitate a shift towards innovation and advanced manufacturing strategies'.

Among the most important factors listed by CEOs, talent, workforce productivity, and educational infrastructure were ranked among the top six. A correlation between skilled labour availability and firm competence was readily observable from their research because the most competitive manufacturing countries as obtained from the survey (whose firms must have high levels of skills and productivity) all scored very high marks on skilled labour related factors. This was supported by a recommendation by the researchers urging companies to strategically position themselves in such a way that they could attract high-quality skilled labour to boost their competence and competitiveness. In their view,

> *"As manufacturing executives continue to rank 'Talent' as the number one driver of competitiveness, companies need to increase their focus on creating*

> *differentiated talent strategies to ensure they are regarded as 'employers of choice' and able to attract top talent. Acquiring, developing and retaining talent, as well as identifying and nurturing new models that leverage key sources of talent outside of the organization, will be critical to establishing long-term competitiveness going forward."* (Deloitte Touche Tohmatsu Limited and Council on Competitiveness, 2016. p 11)

For garment firms to adopt aggressive measures, it is important to know how competitiveness is attained or determined. According to Liargovas and Konstantinos, (2010), there are both financial and non-financial indicators that are used in assessing the competitiveness of firms. While the nonfinancial indicators which include a company's market share, the overall satisfaction of customers and the growth in market share are used relatively less frequently, financial indicators, such as the return on sales, return on assets, and return on equity are commonly used. While return on sales measures the amount of profit a firm makes in relation to its sales, return on assets focusses on the ability of a company to maximize the output it derives from its assets. Return on equity measures how much investors get back after having invested in a firm. Lalinsky, (2013) asserts that market share, profitability, export performance and productivity are usually the main variables by which competitiveness is measured.

Thus it can be assumed that any factor that enabled a firm to achieve higher returns on sales, assets, and investments is contributing to the enhancement of the competitiveness of business. Liargovas and Konstantinos, (2010) believed that the reason why financial indicators were more frequently applied in the measuring of firm competitiveness was that they were easier to compute and could be done using computational methods that were accepted worldwide. Various factors have been identified as being responsible for stimulating and sustaining a firm's competitiveness.

Ambastha and Moyama, (2004) believed that such factors for sustaining firm competitiveness may be both tangible or intangible, but characteristically bestow a competitive advantage on a firm. Among these were factors such as flexibility, speed, agility, and adaptability, which in Barney, Wright, and Ketchen's, (2001) view were increasingly becoming significant with respect to competitiveness. Rapid technological advancement and the massive explosion of global interconnectivity made possible by the internet and other faster and safer means of communication and transportation produced a global community in which change occurred rampantly and an inability to keep up with the latest trends, adapt accordingly and think outside the box are rapidly becoming liabilities.

Brands such as Nokia have gone from being market leaders to being sold off in a less than two decades due to their inability to keep up with rapid changes and stiffer competition (Essays UK, 2013). While admitting that prevailing economic conditions, such as the presence of economic policies that are favourable to businesses as well as the presence of a highly educated and productive workforce, can positively influence firm competitiveness, Liargovas and Konstantinos's, (2010) research also found that the competence of a firm's management team, as well as its size and location, can also influence its ability to compete effectively.

From a strategic management point of view, the factors that determine the competitiveness of firms can broadly be described as internal or external factors. External factors are those that provide a competitive advantage in the general environment, the industry environment or the competitor environment (David, 2017). Basically, with the external factors, competitive advantage is derived by focussing on the opportunities that exist in these environments and developing skills or strategies

required by these environments to be competitive. Since the external factors need industry characteristics, to be dependent on the environment, it is often referred to as the Industrial Organization View (I/O View) of strategic managements.

When implementing competitive strategies based on the I/O view, some of the theories that have been developed to determine competitiveness include the PESTEL framework (www.unicef.org, 2017), Ansoff Matrix (Ansoff, 1978), Porter's Five Forces Analysis (Porter, 1990) among others. For example, the PESTEL framework evaluates the macro environment based on political, economic, sociocultural, technological, ecological and legal opportunities or risks (Unicef.org, 2017). Similarly, the Ansoff Matrix also determines competitiveness based on factors in the environment such as market penetration, market development, product development and diversification (Ansoff, 1978). Finally, Porter's Five Forces Model of competitive analysis includes the potential development of substitute products, rivalry among competing firms, bargaining power of consumers, potential entry of new competitors and bargaining power of suppliers (Porter, 1990).

With the internal factors, the premise is based on the idea that resources within the organization such as physical resources, human resources, and organizational resources should be used in providing competitive advantage (David, 2017). The basis of internal factors in determining competitive advantage is to look within the company or organization and use its resources to out-compete others. According to David (2017), the physical resources comprise plants and equipment, location, technology, raw materials, machines, etc. The human resource also includes employees, training, experience, intelligence, knowledge, skills and abilities among others. Finally, the organizational resources include firm structure, planning process, information systems,

patents, trademarks, copyrights, and database. Just like the external factors that are supported by theories and frameworks, the internal factors for competitiveness are also determined by a theory called the Resource Based View or the Resource Based Theory. This theory is the adopted approach for the current research.

2.5 Theoretical perspective: The Resource-Based View of Organisations (RBV Theory)

The Resource Based View is part of a number of strategic management techniques to achieving a competitive advantage that emerged in the 80s and 90s after the works published by (Barney, 1991; Collis & Montgomery, 1995; Amit & Shoemaker, 1993). The main premise of the RBV theory of organizations is that a firm can achieve a sustained competitive advantage by relying on the internal resources of its organizations compared to other strategic management techniques like the Industrial Organizations (I/O) view which also proposes using an external strategy in gaining a competitive advantage. The theory is illustrated in Figure 2-3.

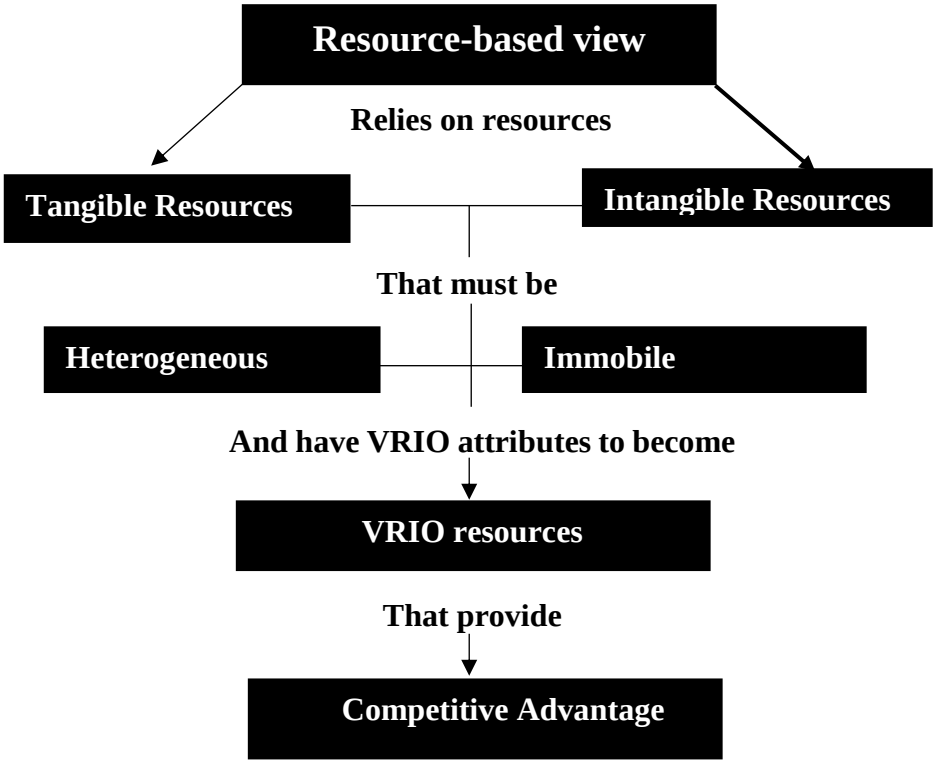


Figure 2-3: The RBV Theory

With regards to the RBV Theory, existing internal resources provide better chances of exploiting external opportunities. Thus, a competitive advantage is firmly linked to the identification and exploitation of internal resources. These internal resources are grouped into tangible and intangible resources:

- ***Tangible Resources***: these are the physical assets which include land, buildings, machinery, equipment, and capital. In the garment industry these assets include production machinery, the location of business and production units. Tangible assets, however, can easily be acquired or replicated by competitors hence do not necessarily confer competitive advantage.
- ***Intangible Resources***: these include non-physical assets and include brand reputation, trademarks, intellectual property, experiences and processes that are not physical but can still be owned by a company. Unlike tangible resources, intangible resources cannot easily be acquired by competitors because it takes long years to establish or possess them. Hence, they underpin the claim of competitive advantage. In the garment industry, intangible assets include brand reputation, skilled workforce, years of experience, intellectual property among others (Rothaermel, 2013).

  Underpinning the RBV theory are two assumptions about the resources: they must be heterogeneous and immobile.
- ***Heterogeneous:*** The assumption here is that all resources that companies possess differ from one company to the other and even though they all compete in the same market, targeting the same consumers, they take different approaches or strategies of competition to reach the same customers. Resources must, therefore, be heterogeneous because if all companies had the same resources in similar quantities and mix, the companies will simply do the same things and no competition will occur. However, for a competitive advantage to happen, resources must be heterogeneous for companies to adopt new strategies to obtain a competitive edge over others (Rothaermel, 2013).
- ***Immobile:*** Another assumption is about the mobility of resources. Thus, if resources are stationary meaning they cannot easily be moved or replicated by competitors, the immobility of intangible resources such as skills, brand equity, intellectual property or experiences in applying knowledge can be used as a strategic advantage.

The RBV theory further explains that having immobile and heterogeneous resources are not enough to sustain or possess a strategic advantage. These resources must also be valuable, rare, costly to imitate and the company must organise to exploit these resources. Hence the term VRIO Framework as shown in Figure 2-4. Regardless of the resource, the VRIO Framework is used to measure or determine if a resource is deemed to provide a sustained competitive advantage, temporary competitive advantage, competitive parity and competitive disadvantage.

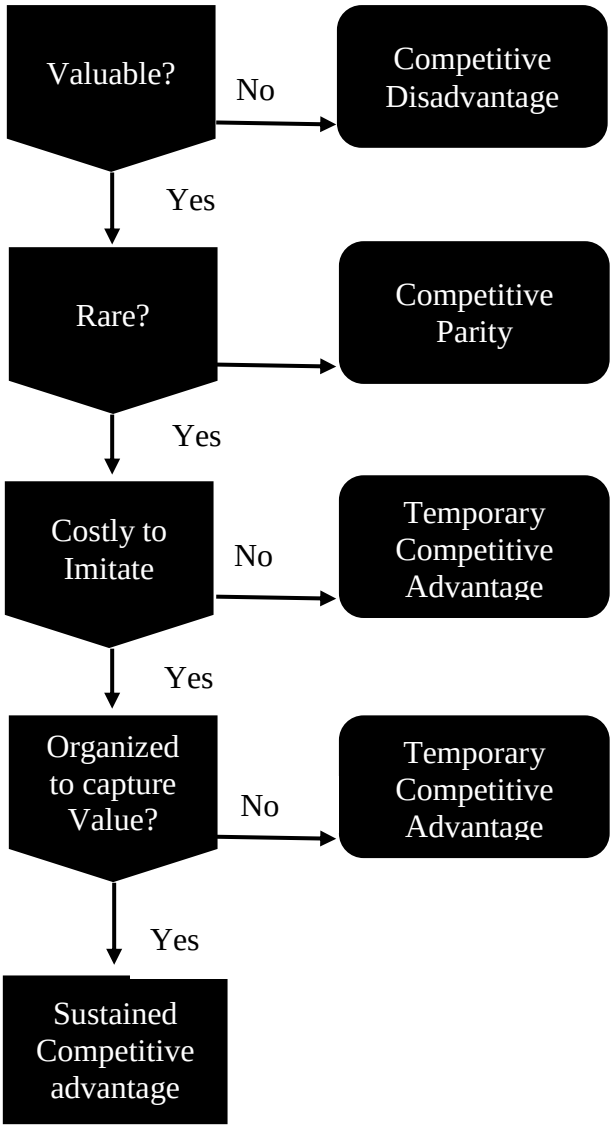


Figure 2-4: The VRIO Framework
Source: Rothaermel, (2013).

Value: With the RBV Theory, resources offer value when they can be identified and used to increase customer value. Value to a client could be low cost or product difference that can sustain the interest of customers. Inability to provide value to customers, therefore, is a competitive disadvantage.

Rarity: Resources must be rare. Rarity means that other competitors will find it hard or impossible to copy or replicate those resources. If a resource is not limited to the company, it offers just competitive parity.

Imitability: when a company has value and rare resources, it can have at least a temporary competitive advantage, but that resource must also be costly to imitate for its rivals or substitute.

Organization: resources must be organized to capture value. In other words, companies must consciously utilize these resources to have sustained advantage. Therefore, a company that has valuable resources that are rare, costly to imitate and organized to capture value would have sustained competitive advantage. The competitive implication and industry performance using the VRIO analysis is shown in Table 2.18

Table 2.18: VRIO Analysis: Impact on Performance

Valuable?	**Rare?**	**Difficult to Imitate?**	**Supported by Organisation**	**Competitive Implications**	**Performance**
No				Competitive Disadvantage	Below Normal
Yes	**No**			Competitive Parity	Normal
Yes	Yes	**No**		Temporary Competitive advantage	Temporally above normal
Yes	Yes	Yes	**No**	Sustainable Competitive advantage	Sustainable above normal
Yes	Yes	Yes	Yes	Sustainable Competitive Offer	Sustainable above normal for you.

Source: Moazum, (2017)

According to Wade and Hulland, (2004) studies using the RBV have strongly supported its premise. However, Rothaermel, (2012) observes that there is equal support for the other theories such as the I/O views that explain firm competitiveness from an external point of view. Rothaermel, (2012) further explains that about 30% to 45% of a firms competitive advantage or superior performance can be attributed to the RBV theory, about 20% to industry effects (I/O view) and the rest, about 30% to 50% to other effects such as corporate parents, year effects or unexplained variance. Therefore, in the view of Rothaermel (2012), the best approach in explaining a firm's competitive advantage is to use both external and internal resources.

For the garment sector, the RBV Theory has been applied to determine competitive advantage of some firms. In an unpublished Doctoral thesis from by Kapelko, (2017), the RBV Theory in determining the efficacy and competitiveness of garment firms. The study found that there is a link between intangible resources and firm productivity or efficiency. Specifically, Kapelko, (2017), wrote that "the increase in efficiency and competitiveness of textiles and clothing firms can be obtained by managing the resources that are invisible, Page 183", meaning that by using the RBV theory, garment firms could improve their competitiveness.

Another study by Goransson, Jonsson, and Persson, (2017) also used the RBV theory to explain the competitive positions of two most profitable firms in Europe: H&M and Zara. That research also found that using internal resources, both H&M and Zara were able to hold some competitive advantages over each other. For instance, H&M had a competitive edge in saving labour costs while Zara benefited from short lead time due to in-house production. In applying the RBV Theory, both types of research proved the use of the theory in determining the competitive advantage of garment firms in addition

to other theories (I/O views) to determine the overall productiveness or efficiency of the firms as noted by Rothaermel, (2013). Finally, Even though both studies evaluated competitiveness based on the RBV theory, they did not make any specific findings on the role of skills.

In justifying its use for this study, the RBV theory is relevant and applicable to ascertain the extent to which skills, as a resource, contributes to competitive advantage. The global garment industry is a saturated market, full of competition for which the application of strategic management theories such as the use of the RBV Theory in examining competitive advantage would help garment firms, particularly those in Ghana to understand where they have competitive stands. As stated in theory, there are key tangible and intangible resources in the garment manufacturing industry that can be identified as shown in Table 2.19.

Table 2.19: Resources in the Garment Industry

Tangible	**Intangible**	
Physical Resources	**Human Resources**	**Intellectual Resources**
• Machinery • Technology • Raw Materials • Free-zone Enclave • Capital	• Product development teams • Skilled Workers • Experience workers • Quick return manufacturing • Cheap labour • Division of labour • Managerial team	• Brand • Partnerships • Creativity • Supply Chain • Marketing Strategy • Online presence • Global sourcing • Niche product

Source: Author's Construct (2018)

Based on the RBV Theory, it is expected that all garment manufacturers will have a mix of the resources as identified in Table 2.19, to be explored for their competitive advantage. Therefore, these resources were assessed using the VRIO framework to determine the extent to which the resources constitute a competitive advantage in this study. The analysis of the Ghanaian garment industry and its competitive advantage

provided current literature on what is lacking or right about garment production and export in the country.

2.6 Job satisfaction and career interest-congruence of workers in addressing skills shortage/productivity and competence.

The knowledge that workers' performance also determines the success or otherwise of a garment manufacturing firm's ability to compete globally lays a lot of emphasis on the quality of employees and their training (ILO, 2015). It also implies that the quality of workers in garment manufacturing firms must have a set of required knowledge through training or education to meet performance standards. Such workers must also be available in such quantities to enable businesses to engage in a truly industrial-scale-production, which can construct mass products within the shortest possible time. In addition to numbers, such workers must also be competent to support firms to win contracts globally while being paid moderately or at a competitive rate. Therefore it is important to investigate the calibre of workers in the garment industry to ensure that a constant flow of competent human resource is always available.

In assessing the quality of employees, it is important to evaluate how their job satisfaction and Career Interest-Congruence contribute to the skills shortage in the industry. This is because it is likely the Career Incongruence resulting from Vocational Education has led to reduced job satisfaction, which could cause skills shortage in the garment industry. As already stated in the study, Vocational training that produces the skills for the industry is often perceived to be an education for the less academically endowed, having a low requirement for admission and as an educational alternative to keep drop-outs and lock-outs (Williams, 2014; Oketch, 2007).

The results of low perception of Vocational programmes and poor profile of students who enroll to pursue courses in tailoring, dressmaking or fashion has led to what some authors perceive as the failure of vocational education (Forster, 1965; Kenneth & Martin, 2000; Oketch, 2007). Despite the assumptions that most graduates of the tailoring, dressmaking or sashion schools work in garment firms or set up their own shops, outcomes of most vocational education have pointed to, not only a systematic failure of their graduates to achieve that aim, but an unsustainable vocational system incapable of meeting the said educational assumptions. Some articles including the one by Williams (2014) has shown that these graduates often went into petty trading of goods after their training. Indeed, the extant literature is replete with evidence of a generally low aspiration for such vocational programmes considered to be part of TVET among the youth (Middleton, Ziderman, & Adams, 1993), with recipients not only being paid less, but having to stay unemployed longer than their counterparts who pursued general education (Oketch, 2007).

For academics, fashion designers or policy makers, these challenges affecting the institutions that train the workforce for the garment manufacturing firms and the type of students who enrol in such programs must not be underestimated. This is because the vocational training institutions are in danger of becoming 'Vocational School Fallacies'. A term that has been used to describe the inability of vocational schools to achieve their set assumptions (Forster, 1965; Kenneth & Martin, 2000). Not only that, an inadequate workforce, unprepared, unmotivated and poorly trained is a danger to the future of firms. Having less than the required workforce also endangers or reduces the contributions of the garment industry in the national economy and deprives the country an opportunity to create employment in an industry that is known as the starter industry towards industrialization. Therefore evaluated the job satisfaction and Career-Interest

Congruence of workers in the garment sector of Ghana to ascertain how these factors could affect skills shortage or productivity and ultimately competitiveness of firms.

Several studies have been conducted to ascertain the relationship if any, between career interest and job satisfaction (Oleski & Subrich, 1996; Holland; 1997; Spokane & Cruza-Guet, 2005; Ishitani, 2010). In order to conduct these studies, researchers have over the years had to start by addressing this fundamental question; what is job satisfaction? While Boxall, (1986, p. 12) defined it as 'a pleasant emotional state arising from work experiences… (Where) people find work a meaningful and worthwhile activity'. Locke, 1969, p. 316) defined it as 'the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values'. Job satisfaction is a subjective concept since satisfaction differs from person to person. Two individuals working in the same environment may derive separate levels of satisfaction from their work.

Several theories have been propounded to aid in the accurate understanding and measurement of job satisfaction among workers. Most notable among these is the classic two-factor classification developed by Herzberg, (1959). Job satisfaction, according to this theory, can be broken down into intrinsic and extrinsic components. The intrinsic component deals with the direct content of the work. Issues such as the importance of the work being done, the recognition that one receives for doing the work and the opportunities that exist for career advancement, among others, arise here. The extrinsic component, on the other hand, encompasses issues such as the salaries and other fringe benefits obtained, as well as the certainty of knowing that one's job is secure.

According to the theory, the intrinsic factors when presented can positively lead to job satisfaction, while the extrinsic factors, while not directly culminating in job satisfaction, can lead to job dissatisfaction when absent. Locke's (1976) Range of Affect Theory is another widely known theory on job satisfaction. Locke theorizes that job satisfaction or dissatisfaction is a function of the difference that exists between a worker's expectations and what they experience at work. When the experience matches or exceeds his/her expectations, the worker experiences job satisfaction, whereas when the worker's expectations are not met, he/she experiences dissatisfaction.

Employers have over the years tried to ascertain the level of satisfaction their employees have with their work. This is due to the belief that job satisfaction leads to improved performance. This belief is true, according to Judge and Karsen, (2001). When workers derive satisfaction from their work, their desire to see it succeed pushes them to work harder at it. The Gallup Organization's, (2002) poll, found that workers who were satisfied with their work displayed higher rates of efficiency and productivity. Employers are not the only people interested in the study of job satisfaction and the factors that trigger and enhance it. Potential employees and career counsellors are were highly interested in job satisfaction. Prospective employees sought to choose the career path that helped them derive satisfaction from their work, while career counsellors strive to aid prospective employees in this endeavor.

Among the factors credited with causing job satisfaction, perhaps the most widely held and thoroughly studied one is the concept of Interest Congruence. The concept of Interest Congruence posits that there is a relationship between a person's career interests and personality type and the satisfaction they derive from the work they do (Holland, 1997). The most acclaimed of these theories is Holland's (1997) Theory of

Vocational Personalities and Work Environments. Holland formulated his theory on the assumption that humans and occupations both have unique characteristics which can be measured. His theory states that there are six basic personality types: the realistic, the investigative, the artistic, the social, the enterprising and the conventional personalities, popularly referred to with the abbreviation, (RIASEC).

Holland (1997, p 4) asserted that individuals usually sought careers that enabled them 'exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles', thus a person's RIASEC personality type affected his/her career interests. Each of these six, according to him, thrived best and achieved most job satisfaction when working in an environment which matched their personality type. When a person's RIASEC personality type matched his/her work environment, congruence was said to have occurred. In this theory, the conventional personality who is detailed and procedure oriented derived greater satisfaction from a bureaucratic and order-cantered environment or profession than in an artistic role that required creativity and a lot of spontaneity. Holland's (1997) theory allowed for individuals who possessed more than one of the six personality types but posits that one of the six was usually the dominant trait.

Commenting on the impact that Holland's Theory had on the field of Career Psychology, Nauta, (2010) stated that it represented a breakthrough in this area. She observed that its impact could simply not be denied, admitting that the fundamental principles of that theory were still in widespread use in the field today. Earl, (2014) stated that despite results from meta-analysis such as Tsabari, Tzinar, and Meir, (2005) which at the time found only a weak correlation or no correlation at all between congruence and job satisfaction, instructional and self-help materials were still not

revised to reflect the new findings. This points to the extent to which the Interest Congruence theory has come to be accepted as an accurate indicator of career success and Job Satisfaction. Holland's (1997) theory is, according to Brown and Lent, (2005) is the most studied career theory; Nauta (2010) suggests that it's amenability to empirical verification, the ease with which is understood as well as the provision of other instruments by Holland (1997) and his colleagues which made it easier for the theory to be practically applied, and was a major factor responsible for its popularity.

Many studies have been carried out to ascertain the veracity of the claim that there is a correlation between interest congruence and job satisfaction. Since Holland (1997) theory is the most widely known of these, many research efforts have been focused on exploring its claims and implications. In Nauta's (2010) assessment of the current state of Holland's theory of Vocational Personalities and Work Environments, individual studies that did confirm the existence of the RIASEC personality types which Holland proposed were cited. These included Edwards and Whitney, (1972) which verified the presence of such personality categories among College Students; Rachman, Amenic, and Aranya (1981) whose studies confirmed the existence of such personality types among working adults.

In Ishitani's, (2010) study of the effects of congruence and Holland's (1997) personality codes on job satisfaction using hierarchical linear modelling techniques, he found that Holland's Theory was much more useful in accounting for intrinsic job satisfaction among females than in males. He, in fact, found a linear relationship between congruence and intrinsic job satisfaction among women. Holland himself has admitted that other factors such as race, gender, age, among others, could affect the relationship between congruence and job satisfaction. As to the veracity of Holland's (1997, p.4)

claim that individuals usually sought careers that enabled them 'exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles', Nauta (2010) cited Betz, (2008) as well as Spokane and Cruza-Guet, (2005) as providing evidence that congruence affected individuals' choices of academic majors as well as careers. This coupled with the fact that findings from Oleski & Subrich, (1996) indicated that persons who left one job for another, ended up choosing jobs that were more and more congruent with their interests and personality, confirmed the fact that some positive correlation did exist between career interest and job satisfaction.

According to Brown and Lent (2012), results from meta-analyses aimed at verifying the relationship between interest congruence and job satisfaction produced mixed results. For instance, while Spokane, Meir, and Catalano, (2000) found a positive correlation between the two, Assouline and Meir, (1987) found only a weak correlation between congruence and job satisfaction. While Young and Borgen, (1993) cited the findings of Assouline and Meir (1987) as providing ample evidence that Holland's Theory demonstrated a relationship between congruence and job satisfaction, Earl (2014) attributes the results obtained from this meta-analysis as well as that of Tranberg, Slane, and Ekeberg, (1993) which found no correlation, to methodological flaws in the research process.

2.7 Theoretical perspective: Holland's Theory of Vocational Interest

Given the explanation offered on Holland's (1997) vocation theory, the research evaluated the Interest Congruence of workers in the garment industry using this theory. The reason for using it in this research was basically to assess individual level data among workers of the garment industry to ascertain the extent to which their career satisfaction affected their job satisfaction as well as the competitiveness of their firms.

Currently, there is no evidence, in literature or anecdotal, that demonstrates a committed systematic attempt to determine and align the career-interest of vocational students and their career choices as pattern makers, dressmakers or tailors on the one hand and how such interests, if any, have any impact on their job satisfaction and productivity. As the discussions about Holland's (1997) theory pointed out, when people's Interest Congruence did not align with their career choice, they were less likely to achieve job satisfaction. Consequently, when people had poor job satisfaction, they may not be willing to upgrade skills or fill vacancies which could mean skills gaps and shortages.

In South Africa, research conducted in the garment sector by Morris and Reed, (2008) showed that low job satisfaction associated with the garment industry was one of the causes of skills shortage. Another research by Pye (2004), also conducted in the garment industry of UK, showed that poor perception about the manufacturing sector including the garment industry had contributed to skills shortage and finally, research in Ghana by Vandyck, (2015) revealed that job satisfaction influenced Musculoskeletal Diseases. .

Many studies have been carried out with the intent of clearly establishing the nature of the relationship between Job Satisfaction and Productivity. The results, however, remain inconclusive in Petty, McGee, and Cavender's, (1984) view. In conducting a Meta-analysis of studies done up until 1984 of the aforementioned relationship, they acknowledged the three top viewpoints on the relationship between Job Satisfaction and Productivity as identified by Schwab and Cummings, (1970) and which is also found in the work of Nord, (1976). The first of these is the view that job satisfaction leads to productivity. Studies on this view at the time of Petty, McGee and Cavender's (1984) Meta-Analysis at best only found a weak correlation between the two. The same

applied to the second viewpoint, which asserted that performance or productivity led to job satisfaction. Their Meta-Analysis concluded that the positive correlation between Job satisfaction and productivity was much stronger than was discovered in earlier studies. The correlation observed was in their own words 'impressive'.

While they found a stronger correlation for the second view point (Performance/Productivity leads to Job satisfaction) than the first (Job satisfaction leads to Performance/Productivity), they found the strongest evidence for a viewpoint similar to the third viewpoint which stated that the relationship between Job Satisfaction and Productivity is only established when other moderating factors were taken into account. The moderating factor according to them was 'Job Level'. This they hypothesized, may be because at higher job levels, opportunities for achieving intrinsic satisfaction were greater and the extrinsic rewards available were larger.

The literature on this subject is not limited only to the effect of job satisfaction on individual productivity. While acknowledging that very few studies have been conducted on how individual job satisfaction affected the productivity of organizations as a whole, some of which have yielded ambiguous results, Bakotic, (2016) rightly identified Evans and Jack, (2003) whose studies found using earnings per share as a key indicator that Job satisfaction had a positive impact on the market competitiveness of firms, as among one of the studies that have found a positive correlation between individual job satisfaction and organizational performance/productivity, even though studies by Daily and Near, (2000) and Mohr and Puck, (2007) found no statistically significant correlation in their respective studies. Bakotic's (2016) study which covered 40 large and medium-sized companies in Croatia, found statistically significant correlations between job satisfaction and three variables which were indicators of

organizational productivity. These factors included return on equity, revenue per employee and labour cost per employee, albeit with a weak intensity. This weak intensity was attributed to the presence of other moderating factors.

Therefore the implication for this study is that literature suggests that there may be some positive correlation between job satisfaction and Firm Competitiveness, though such a correlation would require the consideration of other moderating factors to be firmly established. The existence of a correlation between job satisfaction and organizational productivity/performance as found by Bakotic (2016) and Huselid, (1995) along with confirmation of a similar relationship between productivity and firm competitiveness, that was observed by Petty, McGee and Cavender (1984) after allowing for other moderating factors, all go to buttress the veracity of this assertion. The correlation was, however, of relatively weak intensity. It is therefore much more appropriate to assert that Individual job satisfaction is one of the key drivers of firm competitiveness, than to assert that Job satisfaction is the determinant of firm competitiveness.

2.8 Conceptual framework of the study

A Conceptual Framework was developed based on the extensive review of literature. Figure 2-5 identifies the variables and the relationship among the study variables. It could be observed that Career Interest-Congruence influences job satisfaction but has an inverse effect on skills shortage. This means that as workers' career choices match with their career interest, they are more likely to be satisfied with their job and likely stay in the job, thereby, reducing the skills shortage in the firms. Skills shortage also influenced skills gaps such that the absence of qualified personnel in any firm will result in lower levels of skills available in that firm. Similarly, the presence of skills gaps and shortages had an inverse influence on competence. This suggests that the higher the

skills gaps and shortage, the lower the skills competence. However, the higher the skills competence, the higher the firm level competiveness and global level competitiveness. High firm competitiveness is also expected to lead to high-level global competitiveness and high national level competitiveness. Finally, it is expected that high national level competitiveness would be associated with high global level competitiveness.

Furthermore, the conceptual framework also identified the theories applicable to the study. The RBV Theory was utilized to determine skills competitiveness while the Vocational Interest Theory was applied to determine the Career Interest-Congruence and job satisfaction. Finally, the framework also identified variables that were assessed at the institutional level and individual levels. Variables at the institutional level included: skills shortage, skills gaps, and competitiveness at the global, national and firm levels while the individual level data comprised the Career Interest-Congruence of workers.

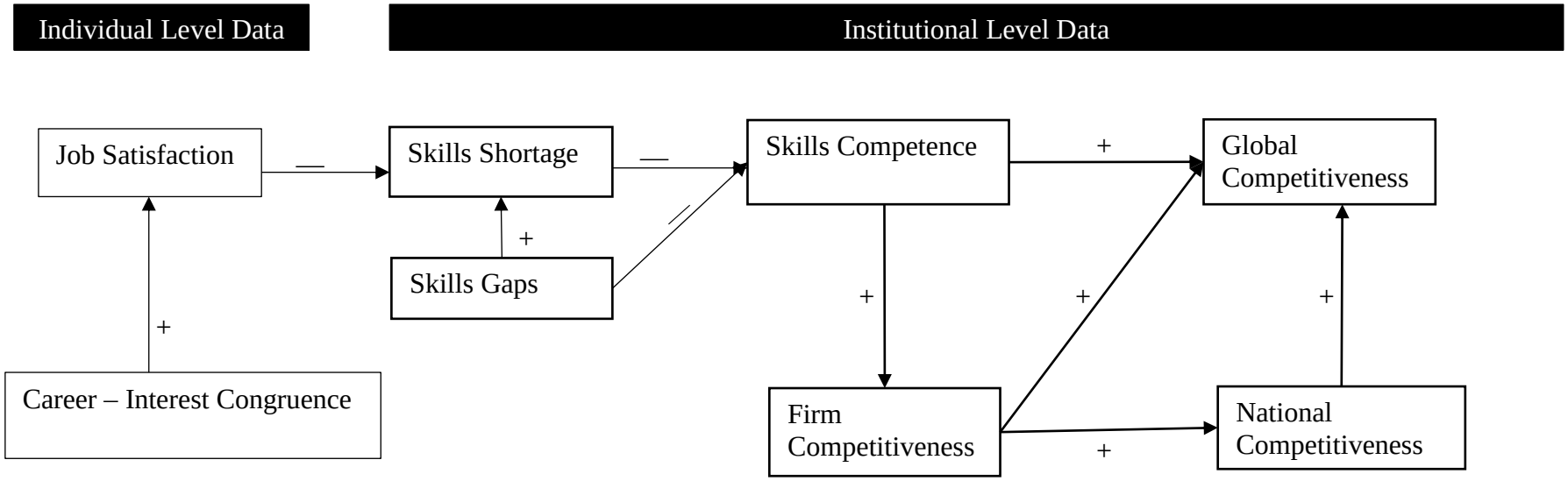


Figure 2-5: Conceptual Framework of the Study indicating the relationship among the study variables.

Source: Author's Construct (2018)

2.9 Hypotheses

Based on the conceptual framework and the objectives of the study, the following hypothesis were developed:

H_1: There is a significant positive relationship between Career interest Congruence and job satisfaction

H_2: There is a significant negative relationship between workers' job satisfaction and skills shortage

H_3: There is a significant negative relationship between skills gaps and competence

H_4: There is a significant positive relationship between skills competence and competitiveness at global level

H_5: There is a significant positive relationship between skills competence and competitiveness at the firm level

H_6: There is a significant positive relationship between competiveness at the national level and competitiveness at the firm level.

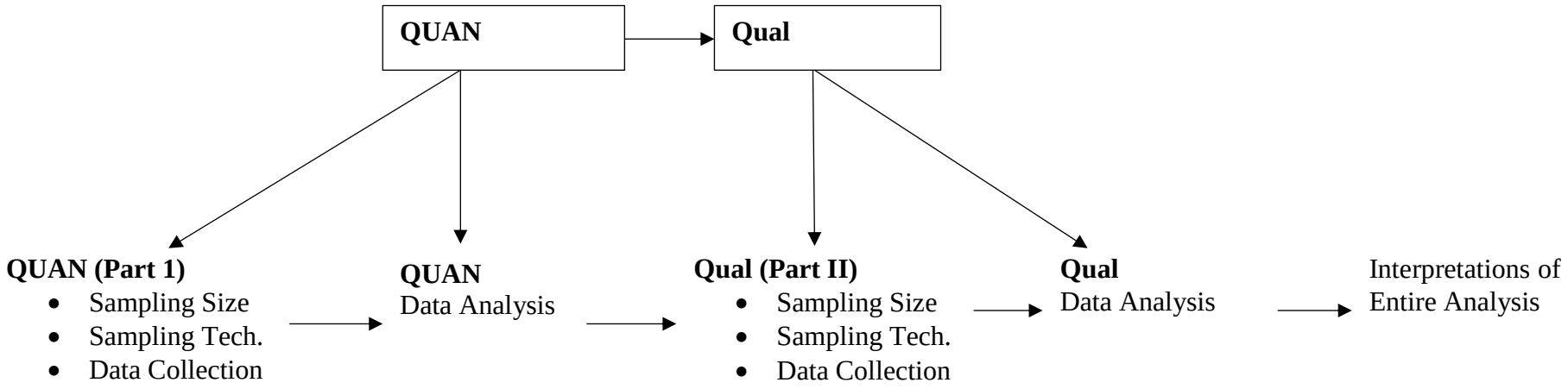
CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Research design

A research design is an overall plan for obtaining answers to questions being studied and for handling some of the difficulties encountered during the research (Polit & Beck, 2003). According to Punch (1999), a research design involves identifying a problem, selecting a sample and sampling techniques, data collection and analysis and presenting the results of the study. The main function of a research design is to ensure that evidence obtained through the research process addresses the research problems as effectively and unambiguously as possible (De Vaus, 2001).

The mixed method approach was chosen as the research design for this study. Mixed methods are methods of conducting research that involve using two methods meaning that the research process uses both qualitative and quantitative approaches to address the research objectives (Teddlie & Yu, 2007; Creswell, 2009). There are different types of mixed methods approaches, including sequential explanatory, sequential exploratory, and sequential transformative design. However, the study adopted the sequential explanatory strategy of mixed methods. As explained by Creswel (2009, p. 211), quantitative data is collected and analysed in the first sequence followed by qualitative data collection and analysis in the second sequence (Refer to Figure 3-1.). Creswell (2003 p. 11), further notes that this approach main purpose is to 'explain and interpret quantitative results by collecting and analyzing follow-up qualitative data. In applying the sequential mixed methods to the study, quantitative data were obtained in the first sequence and qualitative data were used to explain and interpret results as shown in Figure 3-1.



Source: Adapted from Creswell (2009)

Figure 3-1: Illustration of the two parts research design of the study

3.1 Philosophical overview

Research designs often emerge from the philosophical assumptions or worldviews underpinning the research process. Studies that often adopt the pragmatist philosophy use mixed methods in addressing the research problems (Creswell, 2009; Heyvaert, Maes, & Onghena, 2011). Since this study used the mixed method approach, the study was based on the pragmatist worldview of research.

As noted by Creswell (2009, p.9), a pragmatist worldview is one that is concerned with applications and solutions to problems 'using pluralistic approaches to derive knowledge about the problem'. The use of a pluralistic approach often involves mixed methods that draw on both quantitative and qualitative techniques in finding answers. This study therefore, applied the pragmatist philosophy.

3.2 Study area

The study was carried out in the Accra and Tema Metropolitan Areas of the Greater Accra Region of Ghana. Accra is the capital of Ghana, and Tema was built as the industrial hub of Ghana. These two areas were purposively chosen for the study for two reasons. First, most of the countries' major industrial, commercial and administrative centres are located in these places (Ghana Statistical Service, 2016). Indeed, the highest number of organizations in Ghana and their head offices are located in Accra, as shown in Table 3.1 and the highest number of employment in the industry sector is situated in Greater Accra, as also shown in Table 3.2

Table 3.1: Number of establishments located in the regions

Region	Number of Establishments
Western	63,437
Central	52, 975
Greater Accra	**177, 153**
Volta	42, 144
Eastern	58, 766
Ashanti	123,644
Brong Ahafo	49,364
Northern	39, 975
Upper East	17, 056
Upper West	13,728

Source: Ghana Statistical Service (2016)

Table 3.2: Number of people employed by sex and region

		Industry	
Region	**Total**	**Male**	**Female**
Total	*614,517*	*395,205*	*219,312*
Western	73,548	48,360	25,188
Central	33,928	19,457	14,471
G. Accra	**249,084**	**169,396**	**79,688**
Volta	28,968	18,049	10,919
Eastern	36,380	21,411	14,969
Ashanti	92,463	61,207	31,256
B.Ahafo	36,933	21,531	15,402
Northern	35,319	20,991	14,328
U. East	17,142	8,560	8,582
U. West	10,752	6,243	4,509

Source: Ghana Statistical Service (2016)

Another reason why Accra and Tema were chosen was that, as part of the policies towards industrial-scale manufacturing, under the Presidential Special Initiatives (PSI), most of the large-scale garment-manufacturing companies established were in the Greater Accra Region. Therefore, choosing the Accra and Tema enclave provided a good opportunity to have access to those companies and measure the extent to which skills gaps and shortages exist for the purpose of industry level production.

3.3 Population

In a research study, a population is the group of elements about which the research intends to make inferences (Casley & Lury, 1987; Bernard, 2000). It may also refer to the complete totality of objects or individuals regarding which inferences are made in

a sampling study. In any research, two kinds of the populations are dealt with; these are target population and accessible population.

The target population is the entire group of people about whom the researcher wishes to generalize the findings of the study, while the accessible population is a proportion of the population easily accessible to the researcher (Lunsford & Lunsford, 1995). For this study, the target population were all garment firms in Ghana operating in the formal sector, engaged in mass production for export or domestic consumption and registered with either the Association of Ghana Industries (AGI) or the Ghana Free Zones Board (GFZB), as well as workers in the garment industry. However, the accessible population were the garment firms and garment workers located in Accra or Tema with similar characteristics identified as in the target population. The determination of the accessible population for the garment firms and also workers in the garment industry are presented as follows: accessible population of garment firms and garment workers.

3.3.1 Accessible population of garment firms

Overall, the accessible population of garment firms for this study were 57 firms. The composition of those garment firms were made up of seven manufacturing firms registered with Ghana Free Zone Board (GFZB) and 50 firms registered with the Association of Ghana Industries (AGI); making up a total of 57 firms operating in the formal sector of Accra. Following a review of the database of memberships of GFZ and AGI, only seven garment firms had free zone status while the database of AGI also had 50 registered garment firms in their database.

The garment companies registered under the GFZB were mostly medium scale firms that had obtained the required license to operate in the free zones (Ghana Free Zones Board, 2017). Whereas the firms registered under the AGI were chosen because the

AGI is predominantly made up of micro, small and some medium scale firms that do not necessarily enjoy free zone status, but are engaged in garment manufacturing for local and international markets (AGI, 2017). These AGI and GFZB firms form the bulk of garment manufacturing firms in the formal sector. Hence, they were in a position to provide realistic institutional level data on how skills gaps and shortages have affected their firms, particularly with regards to global competition and also to provide an appraisal of skills in the garment manufacturing sector of Ghana.

3.3.2 Accessible population of garment workers

In determining the accessible population of workers, there was no single accurate database that had the exact number of workers for either AGI or GFZB firms or a database of workers in the garment industries in Accra or Tema. This is because workers in the garment sector are not unionized or registered with any entity to enable the research have access to their population. Therefore, there was no definitive number that was assumed accessible population of garment workers.

3.4 Ethical consideration

According to Fouka and Mantzorou, (2011), ethical clearance ensures that research studies put in place measures to respect confidentiality of persons, consent for the process and anonymity of individuals. It also ensures that the beneficence of the study and fairness in the distribution of research inclusion and exclusion are assured. The College of Basic and Applied Sciences of the University of Ghana where this research was undertaken has an Ethical Review Board to ensure that the guidelines are followed in respect of ethical clearance.

To obtain ethical clearance for the study, application forms were obtained from the administrator of the Ethical Review Board. The application form indicated the types of documents to submit. Which were:

- Protocol submission form
- An informed consent for potential research participants
- Complete proposal
- CV of the investigator
- Data collection/Research instrument
- Introduction letter from department

After compiling the support documents, 14 sets of hard copies and one soft copy were submitted to the administrator five weeks before the commencement of data collection. Following a meeting of the Ethical Review Board, approval was given for the commencement of data collection on 18th October 2017 (see Appendix G). Therefore, all the correspondence, as well as the research instruments for this study, were prepared in compliance with the regulations of University of Ghana, College of Applied and Basic Science for both the quantitative and qualitative data collection processes of this study.

3.5 Use of research assistants

According to Gift, Joan, and Parker, (1991), the use of research assistants to help in the conduct of research is not new. The benefit of using research assistant include saving time, helping to administer the questionnaire and helping with the conduct of research, among others (Hutchinson and Moran, 2005; Wilding, Leventon, Favretto and Dyer 2017). Four research assistants were recruited and trained to help collect quantitative data. The use of research assistants was necessary because three different types of questionnaires were administered to garment firms with their workers dispersed across wide geographical areas within a relatively short period. The volume of work involved

in administering such questionnaires could not be done by a single individual within the scheduled time for data collection. Another reason for the use of research assistants was that, during the pre-testing process, respondents were in most cases available when on a short break or within a short time. Hence, the use of research assistants was unavoidable.

To ensure that research assistants possessed qualities that were beneficial to the conduct of the research, Wilding, et al., (2017) recommended research assistants should possess experience, facilitation skills and be resourceful. These qualities are valuable when working on any aspect of the research process. In line with their recommendation, research assistants selected for the study were chosen based on their

- Research background, especially at a tertiary level of education
- Background in administering research instruments and knowledge of research content
- Ability to collect data, supervise and seek informed consent and permission to conduct the study.

Prior to data collection, the research assistants were given training based on the purpose of the study, procedures for contacting respondents and introducing the study, and the conventions of the research instrument as recommended by Wilding, et al., (2017). To motivate the research assistants and ensure that each one of them worked diligently, a negotiable amount was paid for their services. Monitoring mechanisms were also put in place to ensure due diligence in the data collection. Such mechanism included:

i. Forming a 'Whatsapp group' to report data collection location and keeping a diary of all data collection process to be independently verified.
ii. One meeting per week with the group to discuss progress/problems
iii. Check each questionnaire for completeness and accuracy.

iv. Visiting about 15% research assistants' data collection locations to find out if the assistants had been there.

3.6 Sampling technique of selected garment firms and workers (Quantitative Studies)

The sampling techniques used for the garment firms and workers in the quantitative study are presented in sections as follows.

Sampling of garment firms

The study adopted the Census sampling or Total Population sampling technique. This is because all the 57 garment firms were selected as the sample size. The Census Sampling or Total Population sampling is a type of sampling process in which the entire population of interest or sample frame is used (Walliman, 2011 and Bowling, 2014).

The reason for using the census sampling was the relatively small number of seven companies in the Free Zones that eliminated the need for random selection or probability in determining representativeness. Using Census sampling has a number of advantages. There is an opportunity to get a deep insight into the problems under study, the ability to make an analytical generalization and to avoid sampling errors (Ary, Jacobs, & Razavieh, 2002 and Cozby, 2001). However, it requires the researcher to obtain a list of institutions involved, which can be time-consuming. Especially when such institutions are geographically dispersed (Elmes, Kantowitz, & Roediger III, 2003; Opoku, 2005). Having sampled the institutions, representatives of those institutions (CEOs, Human Resource Managers or Supervisors) were interviewed and questionnaire were administered to represent the views of the firm.

Sampling of garment workers

Workers were separated into two groups (strata) for sampling to ensure adequate representation of workers of both organizations, because the workers belonged to two different organizations: AGI and GFZ. The purposive sampling technique was used. As noted by Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood (2015) purposive sampling emphasizes unique and diverse incidences or phenomena among a homogeneous group of respondents. Therefore, to ensure this maximum variation in choice of the respondents, the sample were selected from different firms, locations, and occupational categories.

The choice of the purposive sampling technique was appropriate for selecting the workers because, as noted by Tasshakori and Teddle (2003), it is the most widely used technique in mixed method research. Therefore, its use in this study is consistent with the mixed method approach adopted for this study. Again, in a developing country like Ghana where the sampling frame of workers is non-existent and inaccessible, probability sampling is difficult and almost impossible.

3.6.1 Sample size determination for the selected garment firms and workers (Quantitative study)

This section describes how the sample size were determined for the garment firms and workers in the garment industry.

Sample size of garment firms

Based on the accessible population of 57 firms in Accra and Tema, the study used all the 57 garment firms as the sample size. With regard to the relatively small number of garment firms in the formal sector, this can be attributed to the fact that over the years, some of the garment firms in the formal sector closed down or relocated to other

countries due to high operation cost, issues related to trade liberalisation and under capilisation of the garment industry, among others (Mushita, 2001; Aryeteey, 2008; Rodgers 2016).

The rationale for using all the 57 AGI and GFZ firms was to ensure that all the garment firms were represented and selected for the study to enhance the generalizability of the research findings. In spite of selecting all the garment firms as the sample size, only 34 out of the 57 agreed to participate in this research representing approximately 60% of the accessible population. These 34 firms were made up of all the seven GFZ firms and 27 AGI firms.

A variety of reasons given by the garment firms that did not wish to participate in the research included time constraints, unwillingness to participate in research and the unavailability of the right person to answer the research questions, among others. Nevertheless, the 34 garment firms that participated in the study all possessed the requisite characteristics of interest that enabled the findings of the research to be generalized to the general population. Specifically, they were all in the formal sector, engaged in large-scale mass production for both local consumption and exports. They were also registered with the GFZ or the AGI as garment industries.

Sample size of garment workers

A total of 205 workers were sampled for the quantitative study. In the absence of a specific data on the number of workers in the garment industry, a formula was adopted from Smith (2013) to determine the sample size of workers. The sample size was determined based on 5% level of significance and maximum allowable error of 0.01.Using the standard deviation of 0.73 that emanated from the pilot study, a sample size of approximately 205 was arrived using the formulae below.

$$n = \frac{Z^2_{\frac{\alpha}{2}} \sigma^2}{E^2}$$

$$n = \frac{Z^2_{\frac{0.05}{2}} 0.73^2}{0.01^2}$$

$$n = \frac{1.96^2 \times 0.73^2}{0.01^2}$$

$$n = 205$$

Source: Adopted from Smith (2013)

3.7 Sampling technique for qualitative study

According to Bernard (2000) and Neuman (2006), the choice of sample size and sampling technique depends on a number of factors such as research design, objectives of the study, type of data collection and type of data analysis, among others. However, in determining the sample size and technique for the qualitative study, considerations were given to the extent to which the number of individuals selected provided in-depth knowledge of the issues discussed. For the qualitative study, the determination of sample size and sampling technique are discussed in this chapter.

Sampling technique of garment firms and workers

For the qualitative study, the purposive sampling technique was used to select the seven representatives who spoke on behalf of the 34 garment firms. The same sampling technique was also used to select 10 out of the 205 workers for the interview. The rationale for using the purposive sampling technique was to allow the study to focus on the judgments of the respondents whose opinions were considered critical in explaining the results of the quantitative studies. According to Guest, et al., (2006), purposive sampling is the most common sampling technique for most qualitative studies, just like this one. Therefore, the use of the purposive sampling technique was appropriate not

only because its use is supported by literature but also because it provided an opportunity to obtain in-depth opinions of respondents.

3.7.1 Sample size of garment firms (Qualitative study)

The sample size determined for the garment firms was 10. However, seven garment firms were selected for the qualitative process (interviews) based on the concept of data saturation. Out of the seven, four of the garment firms represented Ghana Free Zone (GFZ) firms and the rest were AGI firms. With regards to ending the interviews or achieving data saturation with only seven (7) respondents, although different researchers including Creswell 1998; Kuzel, 1992; Morso, 1995 differ on how many respondents can be considered adequate to achieve data saturation, studies by Guest, Bunce, and Johnson, (2006) have shown that saturation can be achieved using a minimum of six respondents. Therefore, using seven people, as was done in this study for qualitative data collection was consistent with the literature. With regard to the data saturation, according to Guest, Bunce and Johnson, (2006), it is the most common factor in considering the sample size for qualitative interviews. Although the study intended to interview 10 respondents in the garment firms, after interview number seven (7), no new information was forthcoming in the interview process, so the rest of the intended interviews were terminated.

Sample size of garment workers

After data saturation, 10 in-depth interviews of workers were used for the qualitative process. As noted already in this study, the extant literature supports the use of ten respondents in qualitative studies (Creswell, 1998; Kuzel, 1992; Morso, 1995; Guest, et al., 2006). According to Guest et al. (2006), their simulation study in Ghana and Nigeria showed that saturation can be reached when conducting in-depth interviews

when one has between six and 12 interviewees. This justifies the use of 10 workers for the qualitative study and in addition, saturation was reached after the 10th interview. The ten workers were selected from both AGI firms and GFZ firms to ensure a representation of workers in the two garment industries in Ghana. In determining the sample size, consideration was given to the various occupational categories in the garment firms so that selected workers represented, as much as possible, the experience of working in different sections of the garment industry.

3.8 Instrument for data collection from garment firms and workers (Quantitative study)

The instrument for data collection from the garment firms and workers is discussed as follows:

Instrument for data collection: garment firms

A self-administered questionnaire was used as data collection instrument to collect data, which enabled the study to analyse skill gaps, shortages and competitiveness from the garment firms (See Appendix A). The rationale for choosing a questionnaire was because according to Dillman (2000), a questionnaire saves time and cost. In addition, as noted by Creswell, (2003) and Shaughnessy & Zechmeister (1990) people are more likely to give honest answers to the self-administered questionnaire.

Furthermore, the use of the questionnaire as the instrument for data collection was consistent with data collection practices described in skills based literature. For instance, Roseth, Valerio, and Gutierrez (2016), in a World Bank Report, used a questionnaire to collect data on skills in a survey of large urban areas in 12 countries. The UK Employer Skills Survey used a questionnaire as the instrument for data collection (Pye, 2004) and in Ghana, the Youth Employment Network and International Youth Foundation (2009) used a questionnaire to obtain generic skills information in

Ghana and Senegal. Thus, in this study, the questionnaire was developed as an instrument for data collection in line with the relevant literature (YEN and IYF, 2009; Pye, 2004; Roseth, Valerio, & Gutierrez, 2016) and objectives of the study.

The questionnaire had four sections: assessment of skill gaps, skills shortage, competency level and demographic information (Refer to Appendix A). The test items in the questionnaire had different formats. Some questions were developed as rating scales for the respondent to indicate their preference among the range of choices. Others were developed as a ranking scale for respondents to indicate the level of importance or preference. The rest were developed as three and five point on the Likert Scale. All the questions were close-ended (meaning that respondents were provided with answers from which they could choose their response). According to the Shaughnessy & Zechmeister (1990) close ended (rating and ranking scale) questions are easily to analyse, produce a higher response rate and are generally good for quantitative surveys such as this study.

In relation to the closed ended questions, the answer choices were either ordered or unordered. The ordered answer choices required the respondents to visualize a scale and determine where on that scale their answers fell. For example in Section 2.0 of the questionnaire, respondents were asked about the presence of skill shortages in their firm to which they were to respond on a scale of strongly disagree to strongly agree. The unordered-answer choices required the respondents to compare the discrete categories with each other, a task that is often difficult. To avoid possible answer bias, the answers were stated such that both extreme possibilities were included (strongly agree and strongly disagree).

As recommended by Dillman (2000), a number of steps were taken to obtain a higher response rate. For instance, questions dealing most closely with the research objective were placed towards the beginning of the first page to capture the respondents' attention. Such questions were important, applied to everyone and required more thoughtfulness to answer. The questions were also formatted to draw the respondents from one question to the next without jumping subjects and to minimize possibilities to recall and report on past behaviours.

Finally, reliability analysis was carried out using the Cronbach's Alpha for some of the questionnaire items, namely skills competence, skills shortage and perceived competitive advantage. Given that in social science research, a reliability coefficient of 0.8 is considered acceptable, the coefficient of skills competence was .927, for skills shortage it was .899 and for competitive advantage .955, meaning that the internal consistency of those items were acceptable if not relatively high.

Instrument for data collection: workers

To collect data from workers of the garment industry, a self-administered questionnaire was used (Refer to Appendix B). The questionnaire was based on the RIASEC career-interest inventory developed by Holland (1997) and the Job Satisfaction Survey (JSS) developed by Spector (1997). The reason for using those two instruments (RIASEC & JSS) was to measure and evaluate the career interest and career choice of garment workers' in relation to their career success and the competitiveness of their companies.

Among other inventories for measuring career interests, the RIASEC test was adopted for this study because, according to Brown (2000), Holland's RIASEC inventory is the most influential and has become the basis for numerous studies due to its wide use

among psychologist, sociologist and career counselors. The RIASEC test had 42 rating scale items that required the respondent to indicate their answer choice.

To ensure that the RIASEC interest areas relate to garment occupational categories, the list of occupations by RIASEC interest areas was obtained from the US Department of Labour's O*NET database (O*NET Online, 2017). The O*NET database had a comprehensive list of nearly all career occupations in the various professions organized under the RIASEC code. This enabled the occupational categories in the garment sector to be grouped according to their respective RIASEC codes as shown in Table 3.3

Table 3.3: Occupational Categories with RIASEC Codes

Occupations	RIASEC Code
Pattern Makers, Production Supervisors, Pattern and Fabric Cutters, Pressing and Finishing, CAD/CAM, Machine Repairers, Fit Model / Sample Makers, Production Line / Machinists	**Realistic**
Quality Assurance	**Investigative**
Fashion Designers	**Artistic**
-	**Social**
Merchandising	**Enterprising**
-	**Conventional**

Source: Author's construct based on O*NET database (2017)

As seen from Table 3.3, the majority of occupational categories were under Realistic career interest area with only one each for Investigative, Artistic and Enterprising. None of the occupational categories was identified for the Social and Conventional RIASEC codes. This implies that many of the skills applied in the garment industry were based on psychomotor abilities (Realistic) compared to cognitive or affective abilities.

In addition to the RIASEC inventory, workers also answered questions about their job satisfaction. Job satisfaction is a way of knowing workers' attitude or feelings towards a number of work related constructs or dimensions such as wages, promotion, rewards or supervision, among others (Daily & Near, 2000). Given that workers' attitude towards such work related constructs could affect their attitude or performance in the

workplace, job satisfaction surveys often tried to determine how workers felt or were affected by work related constructs (Holland, 1997). In relation to this study, the Job Satisfactory Survey (JSS) enabled the researcher to collect data on a number of work related constructs that could affect job performance and ultimately competitiveness of firms. As shown in Table 3.4 the test items were developed to collect information on different aspects of the job satisfaction construct.

Table 3.4: Test Items and their Descriptions

Item #	Description
1, 10, 19, 28	Pay and renumeration
2, 11, 20, 33	Promotion and opportunities
3, 12, 21, 30	Immediate Supervisor
4, 13, 22, 29	Monetary and non-monetary fringe benefits
5, 14, 23, 32	Appreciation, recognition, and rewards for good work
6, 15, 24, 31	Operating policies and procedures
7, 16, 25, 34	Co-workers
8, 17, 27, 35	Job tasks themselves
9, 18, 26, 36	Communication within the organization

Source: Spector, (2016)

Just like the RIASEC, there were a number of other surveys available to determine job satisfaction but the Spector's Job (1997) Satisfaction Survey (JSS) was chosen for this research because it is simple, easy to answer and cost effective. The related constructs were, however, adequate and backed by internally consistent reliability measurements. In all, the JSS had 36 questions and had a summated rating scale format, with six choices per item ranging from 'strongly agree' to 'strongly disagree'.

The reliability and validity of the RIASEC inventory have been established in some studies. For instance, Tang (2009) reported reliability of 0.95 on Cronbach's alpha, and Ciechalski (2002) reported a split-half reliability of 0.85 to 0.95. Similar studies using RAISEC by Ciechalski (2002) to determine predictive and concurrent validities also reported 54% hit rate between the RAISEC and other interest inventories. For this

study, the reliability coefficient was 0.917, implying a reasonably strong coefficient. Similarly, for the JSS, according to Spector (2016), the internal consistency based on a sample of 2,870 has also shown that it is a reliable instrument with a reliability coefficient of 0.91 but for this study, the reliability coefficient was 0.85.

Pre-testing of data collection instrument

According to Caspar, Peytcheva, Yan, Lee, Liu and Hu (2017), pretesting enables researchers to avoid errors in measurement and prevent wrong statistical estimations at the population level. This is because wrong estimations at the population level endanger comparability of research findings across different settings. Therefore, as part of the research process, pre-testing of the questionnaire was carried out to check the wording and clarity of the instruments before being administered. Pretesting of individual questionnaires included the RIASEC and Job Satisfaction Survey. Although the RIASECT inventory and the Job Satisfaction Survey were widely used questionnaires and popular across different cultures, it looked like they had not been administered in Ghana before, hence, the need to pre-test, in the Ghanaian context as recommended by Caspar, et al., (2017).

To pretest the questionnaires for the garment firms and the workers, three pretest methods were used. Namely, the Expert Review method, the Question Appraisal System and the Pilot Study (Groves, Fowler, Couper, Lepkowski, Singer, and Tourangeau, 2009; Willis & Lessler, 1999). With the Expert Review method, the questionnaires were given to two subject area experts and one statistical analyst to identify problems with subject area content such as structure, the scope of the questions and implications for methodology and analysis. Similarly, the Question Appraisal System (QAS) was done with a checklist that helped to evaluate the quality of questions

by identifying problems with wordings or structure that could affect questionnaire administration, communication and cause other failures. Both the Expert Review and the QAS methods did not involve going to the field to administer the instruments to a select group of people, unlike the Pilot Study method that involved administering the instrument to a select group of people separately.

The pilot study was carried out in Kumasi on 14th July 2016 using 20 workers and 10 AGI members to examine the questionnaire administration process and to test how prospective respondents understood the questions. All the 30 pilot study respondents were randomly selected. The result showed that among the workers, questions were clear at their level of understanding and the respondents related to the context of the questions. However, with the AGI members, some questions were not clear because of confusing wordings. Hence, modifications were made to the structure and intent of such questions. For example, the fact that in Ghana, most firms did not necessarily have division of labour, (e.g. a Merchandiser), does not mean the activity is not carried out (merchandising). Therefore, questions needed to reflect whether or not the activity (merchandising) is carried out and not whether or not there is an employee with that designation (merchandiser). These items were modified in the final data collection instrument.

Procedures for data collection

Given that, the study used two different groups of population: garment firms and workers as respondents in the garment firms, the procedure for data collection therefore differed. The procedure for collecting data from each group was as follows:

Data collection from garment firms

i. First, a list of formal companies registered under the GFZB and AGI were obtained from Ghana Free Zones Secretariat and Association of Ghana Industries headquarters to identify company addresses.

ii. To avoid companies that were inactive, consultations were initiated with some garment companies to help identify companies that were actively operational.

iii. Letters were written to the active companies explaining the objectives of the study and permission to administer questionnaire or conduct an interview on skills gaps and shortages. Others were called on the phone to seek permission.

iv. Thirty four (34) responses were received and the date for data collection determined

v. Quantitative data collection appointments were then made with the companies for the research assistants to administer the questionnaires.

vi. On the day of administering the questionnaire, all necessary protocols, as stated in the respondents' consent form, were followed to obtain relevant information for the study.

vii. Questionnaires were administered and collected the same day by the research assistants

Data collection from garment workers

i. Permission was sought from employers to enable workers to participate in the study through the letters sent to the companies.

ii. Some institutions allowed working hours to administer questionnaires; others were only available during break periods or after close of work for the questionnaire to be administered by research assistants.

iii. The questionnaires were administered on the premises of the garment firms

iv. On the day of administering the questionnaire, all necessary protocols, as stated in the respondents' consent form, were followed to obtain relevant information for the study

v. The questionnaires were administered and collected the same day by the research assistants.

3.8.1 Instrument for data collection from garment firms and workers (Qualitative study)

Two different semi-structured interview guides were developed and used as the instrument for qualitative data collection (Refer to Appendix C & D). The rationale for choosing the semi-structured interview guides was to provide supporting context to the findings made in the quantitative study. In addition, previous research in other countries that focussed on skills also used a semi-structured interview guide. Furthermore a study by Morris and Reed (2008) which analysed skills gaps and shortages in South Africa. Thus, using the semi-structured interview guide was consistent with the practice in qualitative data collection.

The format and style used for the semi-structured interview guide were adapted from Boyce and Neale (2006). They recommended that the interview guide should have an introductory section that sets out the purpose of the study, confidentiality, and duration, how the interview will be conducted, the opportunity for questions and signature consent. Those recommendations were followed as can be seen in Appendix C and D.

The questions in the interview guide were developed in such a way that the time for the interview was short and thus not overburden the respondents. To enable responses to be based on facts, factual questions came first, followed by opinion questions and the closing section of the interview guide sought additional comment from the respondent.

Respondents were also informed on next steps after collection of the data. All the interviews were audio-recorded with the permission of the respondents. The content of the interview guide for the garment firms focussed on skills gaps, shortage and competitiveness. With the garment workers, the content focussed on skills acquisition, job satisfaction and career aspiration as can be seen in Appendix C and D.

Pre-testing of data collection instrument

The two semi-structured interview guides used to obtain the qualitative data were from the representatives of the garment firms and workers were pre-tested by adopting the Expert Review method. Two lecturers in the Department of Family and Consumer Sciences of University of Ghana and two industry experts who had over 30yrs of experience in the garment manufacturing industry of Ghana as manufacturers and exporters did the Expert Review. Based on their review, it was observed that it took 35-40 minutes to interview a respondent, as instead of the 20 minutes originally intended. Hence, questions had to be reframed in a way not to engage respondents for too long. Also, recommendations were made by the industry experts about the wording of questions, the level of understanding of those questions and their logical sequence. For example, factual questions needed to be asked first before opinion questions. These modifications were implemented in the final interview guides.

Procedures for data collection

Given that the study used two different groups of population: garment firms and workers in the garment industry, the procedure for the qualitative data collection differed. The procedure for collecting data from each group was as follows:

Procedure for garment firms data collection

i. First, all the respondents were informed during the quantitative data collection period that there would be a follow-up interview after the analysis of the quantitative data.

ii. The telephone numbers of respondents who were willing to participate in the interview were obtained.

iii. The respondents whose telephone numbers had been obtained were contacted and the date for data collection determined.

iv. On the day of the interview, all necessary protocols, as stated in the interview guide, including getting respondents' consent, were followed to obtain relevant information for the study.

Procedures for workers data collection

vi. Workers' phone numbers were obtained during the quantitative data collection process.

vii. After the purposive sampling of the workers, they were contacted so that a convenient time could be arranged for the conduct of the interview.

viii. On the day of the interview, all necessary protocols, as stated in the interview guide, including respondents' consent, were followed to obtain relevant information for the study

3.9 Data analysis and presentation (Quantitative study)

With regards to the quantitative analysis, to ensure consistency and accuracy of the instrument, and to correct discrepancies in the responses, data collected using the quantitative instrument were edited, errors corrected and coded or cleaned. The data was then entered into a computer software, screened for errors and summarized using the Statistical Package for Social Sciences (SPSS) version 20-software package. The

SPSS has a large amount of statistical and mathematical functions, scores of statistical measures and a very flexible data handling ability, which was convenient for analysing the data.

A combination of descriptive and inferential analyses was used to make sense out of the data and to answer the research questions (Punch 1999; Bernard 2000; Thomas 2003). The Inferential statistics were applied to test hypotheses and to help generalize the results of the study from the sample to the wider population while descriptive statistics were used to describe the sample. Table 3.5. presents the variables of the research, their status, measurement and scoring for each variable and the analysis performed.

Table 3.5: Determination, Measurement, and Analysis of Variables

Variable	Status	Description	Measurement and scoring	Analysis
Skill Gaps	Predictor	Measures extent to which firms possess or lack the necessary skills competence, which they need to be able to perform to the optimum manufacturing level.	5 point rating scale where a high score means high proficiency and low score means skills gaps	i. Descriptive statistics: (Percentages/Relative importance Index) ii. Inferential Statistics (Correlation Matrix)
Skill Shortages	Predictor	Measures the "hard to fill" vacancies of firms	A checklist indicating presence or absence of skills shortage. Presence means a shortage exists and vice versa	i. Descriptive statistics: (Percentages/Relative importance Index) ii. Inferential Statistics (Correlation Matrix)
Firm Level Competitiveness	Response/outcome variable	Measures competitive firms of firms in relation to their competitive factors	5-point rating scale. A higher score means greater competitiveness or vice versa	i. Descriptive statistics: (Percentages/Relative importance Index) ii. Inferential Statistics (Correlation Matrix)
Global and national skills level competitiveness	Dependent	Measures the extent to which skills levels are competitive nationally and internationally		i. Descriptive statistics: (Percentages/Relative importance Index) ii. Inferential Statistics (Correlation)

	Job Satisfaction	• Dependent variable in the relationship with career-interest congruence • Predictor in the relationship skills shortage	Measures perceptions of the extent to which employees are satisfied with their jobs.	6-point Likert scale. A higher score means greater satisfaction or vice versa	i. Descriptive statistics: (Percentages/Relative importance Index) ii. Inferential Statistics (Correlation and Regression Analysis)
	Career-interest Congruence	• Predictor; it was converted into a dummy code variable for the analysis using career-interest incongruence as the reference category.	Measures whether or not one's occupational choice matches with career interests	Participants are required to indicate agreement or disagreement with each statement using a six point Likert scale. Congruence is determined by whether or not one's occupational choice matches with career interests	i. Descriptive statistics: (Percentages) ii. Inferential Statistics (Correlation. Regression and Chi square)

3.9.1 Data analysis and presentation (Qualitative study)

The qualitative data were analysed using the Thematic Analysis technique. According to Braun and Clark, (2006, p 6), thematic analysis is a method of 'identifying, analysing and reporting patterns (themes) with data'. Thematic analysis is widely used in qualitative studies with different formats and guidelines. Hence, using it in this study was consistent with existing practices. In adopting the thematic analysis, the specific phases used in analysis are presented in Table 3.6.

Table 3.6: Phases of Thematic Analysis (adapted from Warria, Nel, Triegaardt, & Jean, 2014)

	Phase	Description of the analysis process
1	Familiarizing with data	i. Narrative preparation, i.e. transcribing data ii. (Re) reading the data and noting down initial ideas
2	Generating initial codes	i. Coding interesting features of the data in a systematic fashion across entire data set ii. Collating data relevant to each code
3	Searching for themes	i. Collating codes into potential themes ii. Gathering all data relevant to each potential theme
4	Reviewing themes	i. Checking if themes work in relation to the coded extracts ii. Checking if themes work in relation to the entire data set iii. Reviewing data to search for additional themes iv. Generating thematic 'map' of the analysis
5	Defining and naming themes	i. On-going analysis to refine the specifics of each theme and overall story the analysis tells ii. Generating clear definitions and names for each theme
6	Producing the report	i. Selection of vivid, compelling extract examples ii. Final analysis of selected extracts iii. Relating the analysis to support the research question, objectives and previous literature

Source: Braun & Clarke, (2006)

Trustworthiness of qualitative findings

According to DeVault (2017), qualitative studies often adopt the concept of trustworthiness in place of validity and reliability associated with quantitative studies. Trustworthiness is often achieved through credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity). Therefore, to ensure trustworthiness of the findings, a number of steps were taken. First, peers and subject matter experts reviewed the interview guides used for the data collection. This was done to reduce bias and increase confirmability. Secondly, the interviews were recorded and played back to the respondents to verify their statements and the researcher's interpretation of their statements. This was done to achieve credibility. Finally, the sampling process was conducted in such a way that workers in the different occupational areas were selected so that their responses could be generalized (transferability) to the population. The researcher was a lecturer of clothing and textiles who had taught for the past 8 years at the university level as well as serving on the board of the National Accreditation Board evaluation panel. As a result, I was attached to the project and had personal biases. However, I dealt with the biases through the methods of ensuring trustworthiness of the findings.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION

In lieu of the two-part study, this chapter presents the results for quantitative and quantitative studies, followed by the discussion of results.

4.1 Results of quantitative analysis for both workers and garment firms

4.1.2 Profile of garment firms

Table 4.1 presents the profile of Ghanaian firms based on six characteristics: Registered Association, type of manufacturing, the number of employees, local manufacturing, production for local market, international markets and type of garments produced.

Table 4.1: Profile of Firms in the Garment Sector of Ghana

Profile	Percentage
1. **Registered Associations**	
AGI	79
GFZB	21
2. Type of manufacturing	
Full scale	75
Cut make trim	25
3. Firm Size (Employees)	
1 – 10 (Micro)	41
11-30 (Small)	19
Above 30 (Medium)	41
4. Where products are manufactured	
In Ghana	77.4
Outside Ghana	22.6
5. Percentage produced for international market	
Less than 50%	50.0
About 50%	26.7
Above 50%	23.3
6. Type of Garment manufactured	
Outwear	62.5
Dresses	81.3
Sportswear and Separates	50.0
After five and Evening Clothes	71.9
Brides and Bridesmaid Attire	59.4
Blouses	78.1
Uniforms and Aprons	78.1
Maternity	62.5
Infants	41.9
Toddlers	53.1

Children	84.4
Girls	84.4
Preteen	78.1
Boys	68.8
Tailored Clothing	65.6
Furnishing (shirts, neckwear, sweaters, knit tops, underwear, socks, robes and pyjamas)	46.9
Heavy outwear	31.3
Work clothes	43.8
Active sportswear	25.0

***n* = 34**

The results showed that two-thirds of the firms did full-package manufacturing while the rest representing twenty-five percent undertook partial production known as Cut-Make-Trim only (Refer to Table 4.1). The result also showed majority of the firms manufactured their products locally and in terms of destination of manufactured products, half of them were destined for the local market (See Table 4.1). Finally, with regard to firm size, small and medium size firms combined constituted the majority of firms.

4.1.3 Profile of workers in the garment industry of Ghana.

Table 4.2 presents the results of demographic information of workers based on six main characteristics: gender, age, educational level, work experience, current occupation and skills level.

Table 4.2: Profile of Workers

Profile	**Percentage**
Gender	
Male	47.7
Female	52.3
Age	
Below 20	5.3
20 – 30	59.5
30 – 40	26.8
40 – 50	6.8
Above 50	1.6
Mean (SD)	7.93

Source of skills acquisition	
Apprenticeship training	70.5
Pre tertiary (intermediate/advanced Cert	13.7
Tertiary (*HND/ Degree)	15.8
Work experience	
>1	18.3
1 – 5	61.3
6 – 10	13.4
11 – 15	1.6
16 – 20	3.8
21+	1.6
Mean (Std. Dev)	**3.8 (4.64)**
Current Occupation of workers	**Percentage**
Fashion Design	34.4
Pattern making	8.3
Pattern & fabric Cutters	9.1
Quality Assurance Officer	5.9
Production Managers	3.2
Production Line/ Machinists (sewing)	30.1
Fit Model/ Sample Makers	2.0
Machine Repairers	0.5
Pressing & Finishing Officers	6.5

n = 205

Analysis of the profile of workers showed that more than half (52.3%) of the workers were females compared to (47.7%) who were males. The result indicated a dominance of females in the less strenuous, non-technical occupations like designing and machining. With regards to age, the majority of workers (86%) fell between 20 – 40 years with the median age of just 28 years.

Recipients of apprenticeship training were the highest number of employees (70.5%) in the garment industry and despite the fact that over ten (10) tertiary institutions train people in H.N.D and Degree qualifications in Clothing and Textiles in Ghana, the result showed that only a few (15.9%) of the workers had a HND/Degree. The rest had pre-tertiary or tertiary qualifications (Table 4.2.). The majority of workers (61.3%) had between 1-5 years of work experience.

4.1.4 The importance of job specific and generic skills in garment production

In order to determine the importance of job specific and generic skills, two approaches were used: Frequency and Relative Importance Index (RII). The frequency distribution determined whether each skill area was important in percentage (%) terms. Thus, the higher the percentage, the more important the skill. The Relative Importance Index (RII) presented cumulative importance. In other words, it determined the relative importance of each job specific skill in relation to all the skills areas studied. The RII ranges from 0-1 with 1 being the most important. The results are presented in Table 4.3, Table 4.4, Table 4.5 and Table 4.6

Table 4.3: Rating of the Importance of Current Job Specific Skills as reported by the Garment Firms

Current job specific skills	Not important	Quiet important	Important	RII
Fit Model/Sample making skills	0%	11.8%	82.4%	0.95
Production Management Skills	2.9	2.9	79.4	0.97
Fashion Design Skills	5.9	5.9	76.5	0.93
Pattern and Fabric Cutting Skills	5.9	2.9	76.5	0.94
Quality Assurance Skills	5.9	2.9	76.5	0.97
Computer Aided Application	0	14.7	76.5	0.94
Machinist/sewing skills	2.9	5.9	73.5	0.95
Pattern Making Skills	5.9	11.8	70.6	0.91
Iron Pressing Skills	5.9	11.8	67.6	0.91
Repair of Machine Skills	2.9	17.6	61.8	0.90

RII*: Relative Importance Index **0.90 – 0.97**

Table 4.4: Rating of the Importance of Future Skills Needs as reported by Garment Firms

Future skills needs	**Not important**	**Quiet important**	**Important**	**RII**
Quality Assurance Skills	2.9%	0%	82.4%	0.98
Production Management Skills	2.9	0	82.4	0.98
Pattern and Fabric Cutting Skills	5.9	2.9	76.5	0.94
Machinist/Sewing Skills	2.9	5.9	76.5	0.95
Computer Aided Application	0	5.9	76.5	0.98
Fit Model/Sample Making Skills	0	5.9	76.5	0.98
Fashion Design Skills	2.9	5.9	73.5	0.95
Pattern Making Skills	8.8	0	73.5	0.94
Ironing Pressing Skills	2.9	2.9	73.5	0.96
Repair of Machine Skills	2.9	5.9	73.5	0.95

RII*: Relative Importance Index **0.94 – 0.98**

Table 4.5: Rating of the Importance of Current Generic Skills as reported by Garment Firms

Generic skills	Not Important	Quiet Important	Important	RII
Technical Skills	2.9%	2.9%	79.4%	0.95
Basic Computer literacy skills	2.9	8.8	73.5	0.95
Advanced IT skills	0	11.8	70.6	0.92
Multi-tasking Skills	5.9	8.8	70.6	0.88
Communication Skills	5.9	8.8	70.6	0.92
Customer handling skills	2.9	11.8	70.6	0.93
Team working skills	0	14.7	70.6	0.94
Foreign language skills	0	18.8	70.6	0.79
Problem solving skills	0	11.8	70.6	0.81
Management skills	0	11.8	70.6	0.94
Numeracy skills	2.9	11.8	70.6	0.81
Literacy skills	0	11.8	67.6	0.81
Sales and marketing skills	8.8	11.8	67.6	0.95
Personal attributes skills	0	11.8	67.6	0.95
Time management skills	0	11.8	67.6	0.97
Experience-related skills	0	20.6	58.8	0.93

RII*: Relative Importance Index, **n = 34**

Table 4.6: Rating of the Importance of Future Generic Skill Needs as reported by Garment Firms

Generic skills	Important	Quiet Important	Important	RII
Numeracy skills	2.9%	3%	71%	0.88
Experience-related skills	2.9	3	74	0.88
Technical Skills	0	3	79	0.87
Basic Computer literacy skills	0	3	79	0.87
Communication Skills	2.9	-	79	0.87
Customer handling skills	2.9	-	76	0.87
Personal attributes skills	2.9	3	68	0.87
Team working skills	0	3	76	0.86
Literacy skills	0	3	74	0.86
Sales and marketing skills	0	3	74	0.86
Time management skills	0	3	76	0.86
Advanced IT skills	2.9	6	76	0.8
Management skills	0	6	74	0.76
Multi-tasking Skills	0	9	79	0.69
Foreign language skills	0	9	71	0.66
Problem solving skills	0	9	71	0.66

RII*: Relative Importance Index / **n = 34**

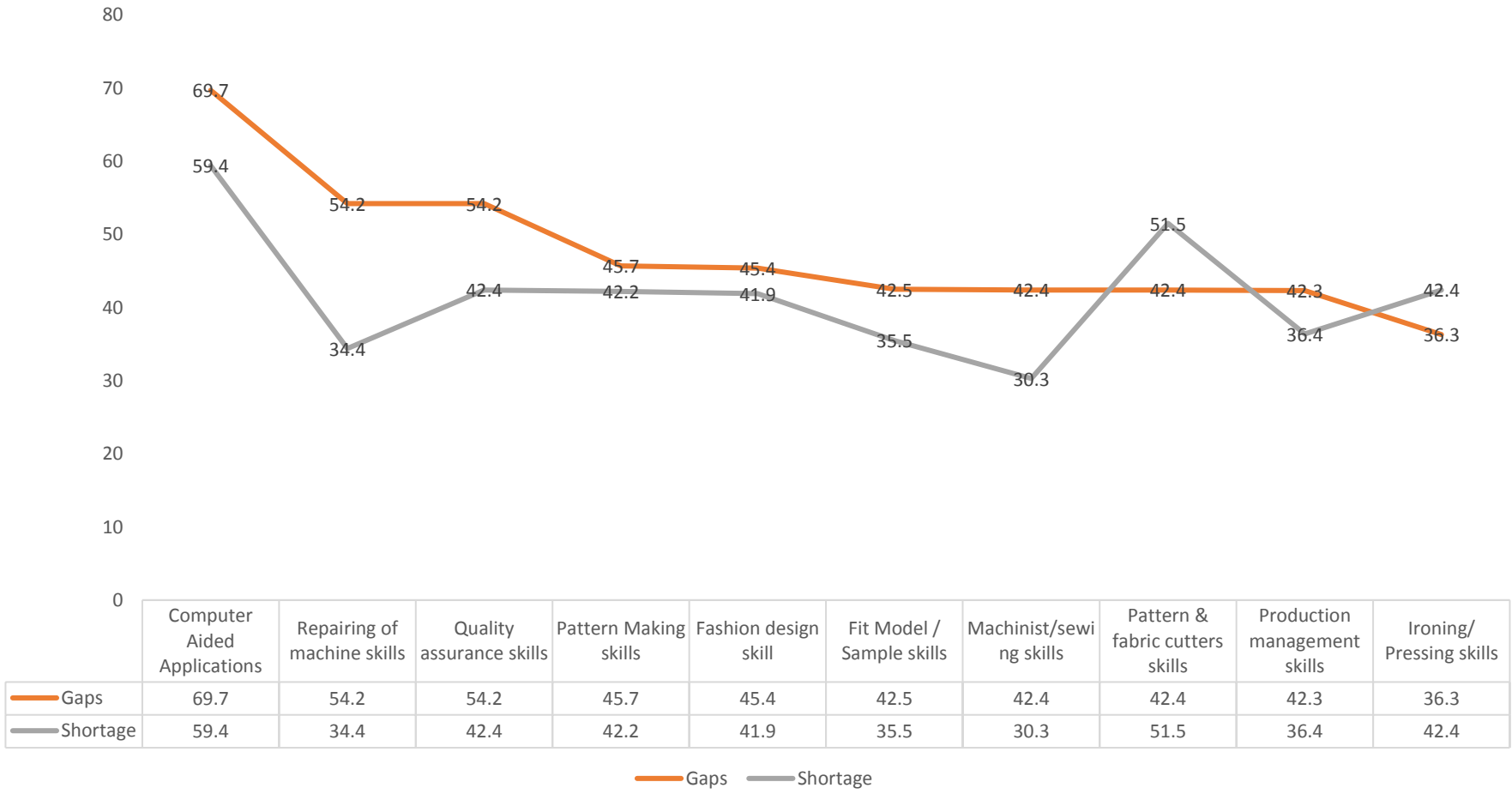
Based on the results, it is obvious that the respondents attach a high level of importance to skills areas including the generic skills. Most of the skills areas were rated between 60% and 70% level of importance inferring, among others, that currently, the garment firms deem these skills areas as very important now and for the future. The relative importance index result also showed that on a scale of 0 – 1, all the skills areas (both generic and job specific skills areas) were very important, as most of the skills were within the range of 0.9, meaning that cumulatively, one skill was not necessarily more important than the other.

4.1.5 Skills gaps and shortages reported by the garment firms

To determine the extent to which skills gaps and shortages were present in the garment industry (objective one), Figure 4-1 presents the result of the frequency distribution of the level of gaps. The higher the percentage, the higher the gaps.

All the garment firms reported varying levels of skills gaps. The highest percentage of skills gaps were in the computer aided application (69%), Machine repairs (54%) and quality assurance (54%). Conversely, the lower percentage of skills gaps occurred in production management (42.3) and pressing skill (36.3%) as shown in (Figure 4-1).

Similar to skills gaps, all the firms reported shortage of qualified personnel in all the skills areas (See Figure 4-1). The skills areas with the highest shortage were in the computer aided application (59%), pattern and fabric cutting (52%) and quality assurance skills (42%), while the skills areas with the lowest shortage were in machine/sewing skills, Machine repairs and fit model/sample making (Figure 4-1).The result suggests that about one-quarter (30 – 45%) of vacancies exist for people with the required skills.



	Computer Aided Applications	Repairing of machine skills	Quality assurance skills	Pattern Making skills	Fashion design skill	Fit Model / Sample skills	Machinist/sewing skills	Pattern & fabric cutters skills	Production management skills	Ironing/ Pressing skills
Gaps	69.7	54.2	54.2	45.7	45.4	42.5	42.4	42.4	42.3	36.3
Shortage	59.4	34.4	42.4	42.2	41.9	35.5	30.3	51.5	36.4	42.4

Figure 4-1: Skill Gaps and Shortages reported by Garment Firms

The results of Figure 4-1 showed the extent of skills gaps and shortage affecting the garment firms. In Table 4.7 additional data was provided by the garment firms in relation to recruitment challenges and strategies adopted to address such recruitment challenges.

Table 4.7: Recruitment challenges reported by garment firms and strategies adopted to address them

Recruitment Challenges (Reasons skills shortage)	**Percentage of firms that reported challenges**
Lack of requisite qualifications among applicants	73.3
Low number of skilled applicants in the general population	65.6
Low number of motivated applicants willing to work	65.6
Perceived low pay of workers in the garment industry	62.5
Lack of work experience among applicants	60.0
Strategies adopted to address recruitment shortages	**Percentage of firms that adopted strategies**
Recruit qualified people from the industry	87.1
Recruit semi-qualified people	77.4
Recruit new unqualified (mainly unemployed) people from outside	74.2
Source people internally and promote them	86.7
Recruit people from outside the industry with generic skills	76.7
Recruit graduates from formal and informal institutions	83.3
Outsource that part of shortage to another firm	40.0

n = 34

As seen in Table 4.7 additional analysis of skills shortage shows that recruiting qualified people was a challenge to the garment firms, and the reasons for the challenges are varied, as seen in Table 4.7.

4.1.6 Skills-based competence reported by garment firms

The results presented in Table 4.8 showed how many garment firms that rated themselves as below, average and above average. As seen in Table 4.8, many of them rated themselves as having above average skills competence in the skills areas.

Table 4.8: Self-Assessment of Skills Competence by Garment Firms in Ghana

Job specific Skills	Skill Competence		
	Below average %	Average %	Above average %
Fashion design	12.1	33.3	54.5
Computer-Aided Apps	36.4	33.3	30.3
Production management	18.2	24.2	57.6
Fit Model / Sample Making	6.1	36.4	57.6
Repairing of machine	9.1	45.5	45.5
Pattern Making	15.2	30.3	54.5
Pattern & fabric cutting	3.0	39.4	57.6
Quality assurance	21.2	33.3	45.5
Machinist/sewing	12.1	30.3	57.6
Ironing/ Pressing	3.0	33.3	63.6
Overall	**12.1**	**36.4**	**51.5**

n = 34

With regard to the specific skills, Ironing/pressing had the highest number of firms (63.6) followed by Production management (57.6), Sample making (57.6), Pattern and fabric cutting (57.6) and Sewing skills (57.6). Given that the results are based on self-assessments, it undoubtedly reflects the self-confidence the garment firms had in themselves with regard to skills competence.

4.1.7 Firm competitiveness reported by garment firms

To determine the level of competitiveness (third objective), the garment firms were required to assess themselves. The results are presented using percentages (See Table 4.9). Overall, the results show that many of the garment firms were predominantly average in term of critical competitive factors in the global garment industry including analysis and use of technology, business planning skills, loan and machine management, marketing skills, brand loyalty and production skills (See Table 4.9).

Table 4.9: Self-Assessment of Firm Competiveness

Firm Competitiveness	**Needs Improvement**	**Satisfactory**	**Average**	**Above average**	**Outstanding**
	%	%	**%**	**%**	**%**
Analysis and use of technology	21.9	15.6	40.6	12.2	9.4
Business planning skills	21.2	12.1	39.4	18.2	9.1
Loan and interest rate management	35.5	12.9	35.5	9.7	6.5
Low cost of production	21.9	25.0	25.0	21.9	6.3
Machine management	12.1	21.2	45.5	15.2	6.1
Niche Focus	12.5	28.1	25.0	25.0	9.4
Marketing skills	18.8	9.4	43.8	21.9	6.3
Brand Loyalty	15.2	9.1	33.3	30.3	12.1
Production skills	9.1	9.1	30.3	30.3	21.2

n=34

Only about twenty-two percent of garment firms assessed themselves as above average in low cost production while 6.3% of firms reported outstanding self-assessment. Similarly, only 25% were above average and 9.4% outstanding in niche focus.

4.1.8 Career – interest congruence and job satisfaction of workers

To determine Career-interest congruence and job satisfaction of workers, each workers' current occupation was matched with the workers' career interest information indicated in the questionnaire. A match between the current occupation and the stated career interest is congruence. A mismatch is an incongruence (Holland, 1997). Hence, career-interest congruence was determined by how many workers had a match or mismatch between their current occupations and their career interests. The results showed that a little over half of the workers' interest were incongruent with their careers (56.4%) while the rest (43.6%) had congruence. This means that many of workers had chosen careers in the garment industry that did not align with their career interest (See further analysis involving first three choices of the RIASEC codes in appendix D. With regard

to job satisfaction, the result is presented in Table 4.10 using the summation of scores that indicate whether they were satisfied, dissatisfied or ambivalent.

Table 4.10: Sum Scores for Workers' Job Satisfaction

Variable	Dissatisfied	Ambivalent	Satisfied	M	SD
Pay	30.1%	37.7%	**32.2%**	13.6	3.9
Promotion	16.9	43.9	39.2	14.8	3.5
Supervision	2.1	18.6	**79.3**	18.9	3.9
Fringe Benefits	29.1	46.7	24.2	13.0	4.2
Contingent Reward	17.7	34.9	47.4	14.7	4.2
Operating Proc.	12.1	44.5	43.4	15.1	3.3
Co-workers	5.6	17.4	**76.9**	18.5	4.0
Nature Of Work	9.8	22.2	**68.0**	17.9	4.9
Communication	14.0	26.3	**59.7**	16.8	4.7
Overall job satisfaction	**6.2%**	**39.3%**	**54.5%**	**144.5**	**22.7**

The workers were dissatisfied or ambivalent with pay, operating procedure, contingent rewards, fringe benefits and promotion (Refer to Table 4.10). However, a look at Table 4.10 also reveals some key issues that were important to the respondents. For instance, the majority of respondents (79%) were very satisfied with supervision and co-workers (approx.77%). Additionally, the nature of the work they were doing was satisfying to them as was the communication among them (Table 4.10).

Using further statistical analyses, a correlation matrix with variables; job satisfaction, age and work experience showed a significant relationship between age and promotion satisfaction (r = .199, p < 0.01) (Table 4.11) meaning the more the respondents mature in age and on the job, the more satisfied they become with the promotion. There was also a significant relationship between experience and nature of work (r =.221. p < 0.01) meaning the more experienced workers tended to be satisfied with the nature of the work.

Table 4.11: Correlation Matrix involving Job Satisfaction, Age and Work Experience

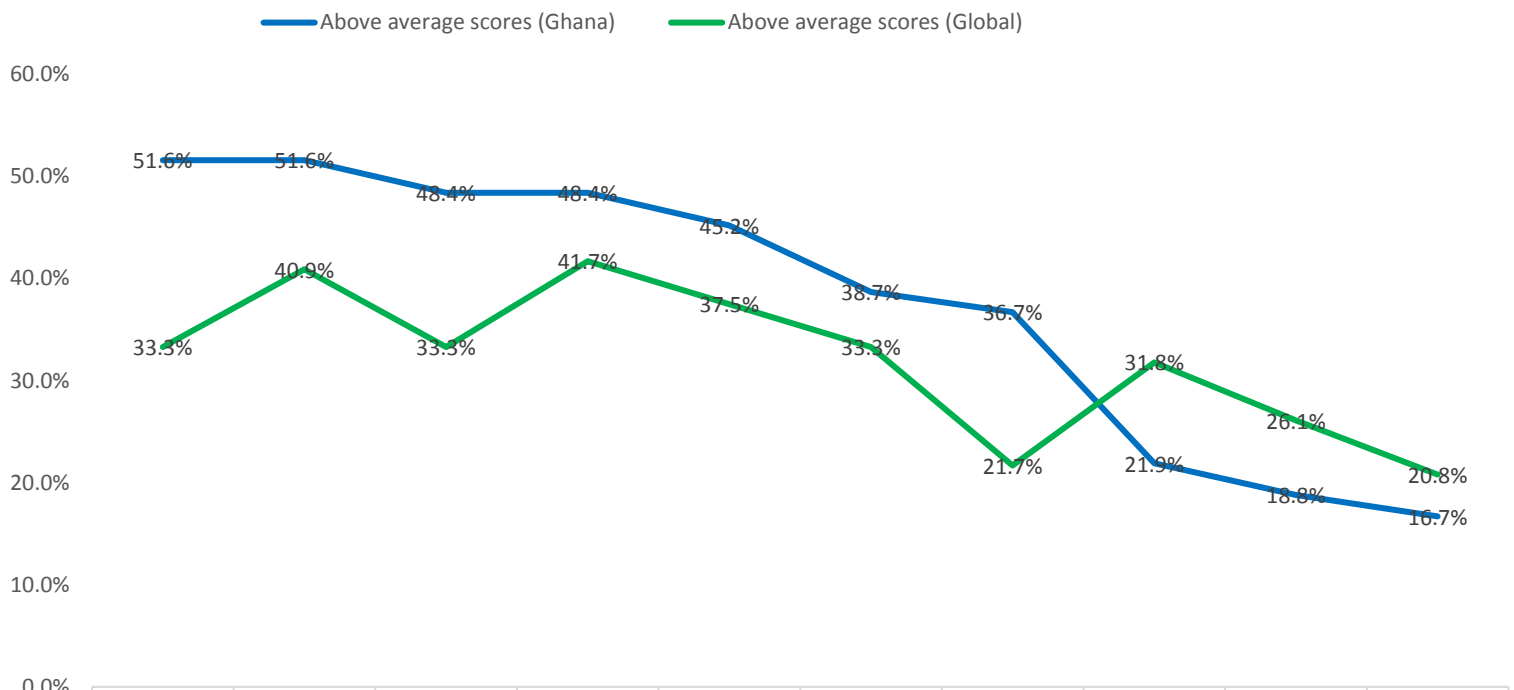
Variables	S	K	1	2	3	4	5	6	7	8	9	10	11
Pay (1)	-0.15	0.286											
Promotion (2)	0.022	-0.19	.276**										
Supervision (3)	-0.43	-0.36	.007	.119									
Fringe benefits (4)	0.021	0.222	.409**	.262**	-.010								
Contingent reward (5)	-0.46	0.373	.460**	.237**	.142	.328**							
Operation (6)	-0.34	0.645	.025	-.148	.091	.115	.086						
Co-worker (7)	-0.66	0.12	.032	.098	.571**	.022	.110	.133					
Nature of work (8)	-0.43	-0.66	.120	.382**	.408**	.127	.223**	.172*	.346**				
Communication (9)	-0.24	-0.28	.180*	.182*	.244**	.171*	.267**	.213**	.230**	.300**			
Overall JSS (10)	-0.27	0.965	.362**	.380**	.466**	.349**	.511**	.290**	.530**	.651**	.563**		
Experience (11)	2.199	4.820	-.143	.086	.090	-.043	-.089	-.072	.020	**.221****	-.017	.060	
Age	1.276	4.303	.116	**.199****	.054	-.021	.056	.027	-.008	.215**	.128	.159	.578**

*P < 0.05, **p < 0.01

4.1.9 Skills-based competitiveness at national and global levels

The frequency distribution was used to present the percentage of responses on skills-based competitiveness. The results shown in Figure 4-2 reflect only the number of garment firms that rated themselves as above average (very competitive). This was to enable the research make inferences about competitiveness at the national and global levels (See complete results are shown in appendix F).

The results at the national level showed that only about half of the garment firms reported above average competitiveness in pattern making (51.6%) and ironing/pressing (51.6%). Just about quarter of the garment firms assessed themselves as above average for the rest of the skills. At the global level, only a quarter of garment firms reported above average competitiveness in the skills areas. Specifically, the highest number of garment firms reported machinist/sewing skills as their most competitive skills (41.7%) followed by ironing/pressing skills (40.9%). A comparison of the scores at the national and global level shows that many garment firms generally report above average higher competitiveness in the skills areas at the national level than at the global level, as shown in (Figure 4-2).



	Pattern Making skills	Ironing/ Pressing skills	Quality assurance skills	Machinist/sewing skills	Pattern & fabric cutting skills	Fashion Design skills	Production management skills	Machine Repair skills	Fit Model / Sample Making skills	Computer Aided Applications
Above average scores (Ghana)	51.6%	51.6%	48.4%	48.4%	45.2%	38.7%	36.7%	21.9%	18.8%	16.7%
Above average scores (Global)	33.3%	40.9%	33.3%	41.7%	37.5%	33.3%	21.7%	31.8%	26.1%	20.8%

Figure 4-2: Number of garment firms that reported above average competitiveness at the national and global Levels (n = 34)

4.1.10 Analysis of competitive performance of garment firms

The frequency distribution table presents the performance of the garment firms (See Table 4.12). The results indicate that the skills levels available in the Ghanaian firm were just competitive parity (highlighted in the Table 4.12). Such skills levels are less competitive and vulnerable to superior skills from competitors.

Table 4.12: Analysis of Competitiveness Performance of the Skills Areas

Skills	Competitive disadvantage (%)	Competitive* Parity (%)	Temporary Advantage (%)	Sustainable Adv. (%)
Fashion design	4	**69**	19	8
Computer-Aided Apps.	16	**60**	16	8
Production MGT	4	**75**	21	0
Sample Making	4	**63**	20	13
Repairing of machine	8	**64**	24	4
Pattern Making	8	**73**	15	4
Pattern/fabric cutting	0	**80**	12	8
Quality assurance	8	**72**	20	0
Machining	8	**73**	11	8
Ironing/ Pressing	0	**73**	15	12

*Competitive parity denotes vulnerability to higher competition (n = 34)

4.1.11 Testing of hypotheses

Hypothesis 1

It was hypothesized that career-interest congruence would result in higher job satisfaction (hypothesis 1). To test this hypothesis, a dummy coded variable was created for congruence with reference category as 'no congruence'. A standard linear regression was then performed to examine the relationship between career-interest congruence and job satisfaction. Results of the analysis showed that no significant relationship existed between career-interest congruence and job satisfaction, $R = 0.085$, $F\ (1, 127) = 0.928$, $p > 0.05$. Table 4.13 and Table 4.14 present the results of the linear

regression analysis, means and standards deviations for participants with congruence and those without congruence respectively.

Table 4.13: Means and standard deviations of workers with congruence and those without congruence in terms of job satisfaction

	Career-Interest Congruence	*n*	*M*	*SD*
Overall job satisfaction	**Congruence**	**54**	**148.91**	**20.71**
	No Congruence	**75**	**145.16**	**22.53**
Pay	Congruence	70	14.03	4.04
	No Congruence	93	13.65	3.67
Promotion	Congruence	74	15.04	3.72
	No Congruence	96	14.89	3.16
Supervision	Congruence	77	19.35	3.85
	No Congruence	92	18.67	3.98
Benefit	Congruence	75	13.56	4.54
	No Congruence	88	13.06	4.13
Contingent Reward	Congruence	75	14.93	4.27
	No Congruence	98	14.71	3.98
Operating Procedures	Congruence	72	15.15	3.55
	No Congruence	92	15.26	3.33
Co-workers	Congruence	77	18.53	3.99
	No Congruence	99	18.40	4.28
Nature of work	Congruence	76	18.51	4.78
	No Congruence	100	18.24	4.84
Communication	Congruence	75	17.2	4.89
	No Congruence	94	16.87	4.48

Table 4.14: Results of the linear regression using Career-Interest Congruence to predict job satisfaction

Model		**Sum of Squares**	**df**	**MS**	**F**	**p**	**R**	**R^2**
1	Regression	440.887	1	440.887	**.928**	.337	**.085**	.007*
	Residual	60308.617	127	474.871				
	Total	60749.504	128					

$R = 0.085$, $F\ (1, 127) = 0.928$, $p > 0.05$; $*p > 0.05$

Results of the analysis show that no significant relationship exists between career-interest congruence and job satisfaction, meaning Hypothesis One was not significant. The results suggest that, among the sample, having career-interest congruence has no

impact on their job satisfaction level. This implies that both those with and without congruence had similar levels of job satisfaction. In other words, career-interest congruence is not a significant predictor of job satisfaction. The means and standard deviations presented in Table 4.14 indicate that both those with (*M* = 148.91, *SD* = 20.71) and without congruence (*M* = 145.16, *SD* = 22.53) reported higher levels of job satisfaction. The findings of this study are contrary to Holland's Theory of Vocational Interest. This implies that concerning the respondents in the study, perhaps other factors account for workers' job satisfaction and not their career – interest congruence, as stated in Holland's Theory

Using the t-test analysis for further analysis, the study also determined the relationship between job satisfaction, congruence, gender and training (See Table 4.15). The result showed a significant difference between males (M = 15.25, SD = 3.07) and females (M = 14.23, SD = 3.70) in terms of their satisfaction with promotion, t (182) = 2.031, $p < 0.05$. This means that males were more satisfied with promotion than females. Apart from promotion, there were no gender differences in job satisfaction and no significant relationship between trained and untrained workers which implies that the fact that someone is trained or not, does not determine their job satisfaction.

Table 4.15: Relationship between Congruence and Job Satisfaction, Gender and Training of Workers

Job Satisfaction	Congruence		Gender		Training	
	T	*df*	*T*	*df*	*t*	*df*
Overall job satisfaction	.964	127	-.015	141	1.079	127
Pay	.633	161	-.702	177	1.173	160
Promotion	.294	168	**2.031***	182	.420	165
Supervision	1.117	167	-.960	183	.905	165
Fringe benefits	.741	161	-.608	176	.251	159
Contingent reward	.348	171	-.040	185	-.792	167
Operation	-.200	162	.164	175	-.125	160
Co-workers	.203	174	.179	188	1.771	170
Nature of work	.373	174	.917	187	1.404	169
Communication	.453	167	-.193	180	1.838	163

Hypothesis 2

It was hypothesized that there was a significant negative relationship between workers job satisfaction and skills shortage. As seen in Table 4.16, that hypothesis was not supported (r = -.058, p > 0.05). This means that there are other reasons why workers quit their jobs, which causes skills shortages to the garment firms. However, that may not necessarily be due to job dissatisfaction.

Table 4.16: Intercorrelation among study variables

	1	2	3	4	5	6
Firm Competitiveness (1)						
Skill Competence (2)	**.505****					
Skills Gaps (3)	.243	.320				
Job Satisfaction (4)	.050	-.043	.172			
Ghana Competitiveness (5)	**.466****	.224	.032	-.236		
Global Competitiveness (6)	.329	**.372***	.107	.042	.068	
Shortage	.111	-.211	-.261	-.058	.207	.084

*P < 0.05, **p < 0.01

Hypothesis 3

The third hypothesis of the study stated that there was an inverse relationship between skills gaps and skill competence based on the assumption that higher skills gaps would cause low skills competence in the garment firms. However, using correlation analysis (See Table 4.16), the hypothesis was not supported (r = .320, p > 0.05), which means

that higher skills gaps did not influence low skills competence at the firm. The result signifies that the link between skills gaps and skills competence may not be as strong. This means that the fact that most Ghanaian firms reported relatively high skills gaps may not necessarily mean that they have low skills competence.

Hypothesis 4

The fourth hypothesis of the study was that there is a positive relationship between skills competence and competitiveness at the global level. Based on the correlation analysis (See Table 4.16). The results showed there was a significant positive relationship between global competitiveness and skills competence (r = 0.372, p < 0.05), implying that firms with high perceived skills competence tended to also be more competitive globally. The result means that if Ghanaian firms increase skills competence, it might increase their competitiveness globally.

Hypothesis 5

The fifth hypothesis of the study was that there is a positive relationship between skills competence and competitiveness at firm level with the assumption that if the garment firms have high skills competence, they would also be competitive at the firm level. The correlation analysis of hypothesis five showed a significant positive relationship between skill competence and firm competitiveness (r = 0.505, p < 0.01). This implies that firms with relatively higher institutional skills levels tend to also have high firm competitiveness. Thus, if Ghanaian firms improve their skills levels, it would also improve the firm competitiveness.

Hypothesis 6

The final hypothesis of the study was that there is a positive relationship between skills competence at the national level and competitiveness at the firm level. The result of the

analysis showed a significant positive relationship between firm competitiveness and skills competitiveness in Ghana ($r = 0.466$, $p < 0.05$). This implies that firms with high competence also have high national skills competitiveness. Thus, the higher the skills levels in the country, the more competitive the garment firms.

It is important to note that with regards to testing of all the hypotheses, further analyses using linear multiple regression were not conducted because most of the relationships in the intercorrelation matrix were not significant (Table 4.16). After testing all the six hypotheses in relation to the conceptual framework, a revised conceptual framework showing the supported hypotheses and hypothesis that were not supported is shown in Figure 4-3.

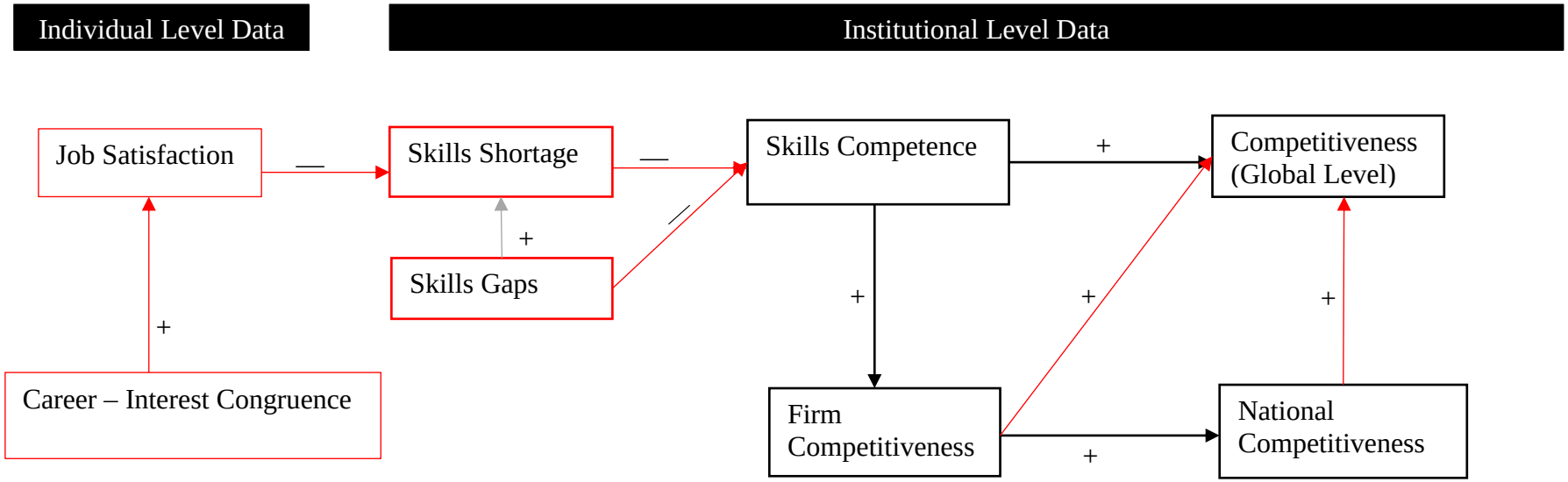


Figure 4-3: Revised Model Showing Significant Relationship

Note: Hypotheses not supported are in red and supported hypotheses in black

4.1.12 Summary of quantitative findings

After the analysis of results, the major findings of the quantitative study are summarized based on the objectives of the research:

Objective 1: examine Skills gaps and shortages

After analysing skills gaps and shortages, all the garment firms reported having skills gaps and shortages in all the 10 essential skills areas required for production. However, the levels of the skills gaps and shortages differed. While some skills areas, such as sewing, had relatively low levels of skills gaps and shortages, other skills areas, such as repairing of sewing machines, computer aided applications and quality assurance had moderately high levels of skills gaps and shortages.

Objective 2: determine the level of skills-based competence in the garment firms of Ghana

With regard to skills competence, the study found that only an average number of garment firms reported that they had the competence in applying the skills areas. The rest of the garment firms reported moderate or low competence.

Objective 3: Establish the level of firm competitiveness in the garment sector

The study found that the Ghanaian firms were less competitive in critical competitive factors such as low-cost production, use of technology, niche focus and branding, which are essential factors that determine competitive advantages in the garment sector.

Objective 4: determine the competitive levels of skills towards national and global skills competitiveness

With regard to skills-based competitiveness at the national level, out of the 10 skills areas assessed, pattern making and (ironing/pressing) were the only skills areas in which a little over half of the respondents reported above average competence based on their self-assessment. A quarter of the respondents reported above average performance

in the rest of the skills areas that are critical skills in the national competitive environment. Similarly, out of the 10 skills areas assessed at the global level, only a quarter of the garment firms reported above average competence in applying the skills in the global competitive garment industry.

Objective 5: analyse the competitive performance of skills-led competitiveness in the garment sector

After analysing the competitive performance of the garment industries based on skills, using the Resource Based Theory, the results showed that the level of skills performance was just competitive parity versus the sustainable advantage that is required to obtain competitive advantage. Therefore, the study found that there was nothing exceptional about labour skills in Ghana that could be used as a competitive advantage over other garment manufacturers around the world.

Objective 6: determine the role of workers Career-interest Congruence and job satisfaction towards skills shortage in the garment firms

A little over half of the workers had career-interest incongruence (56.4%), while the rest (43.6%) had career-interest congruence. After testing the hypothesis based on Holland's Vocational Interest Theory, the study found that both those with and without congruence had similar levels of job satisfaction. Hence, contrary to Holland's Vocational Interest theory, Career-interest did not predict job satisfaction. Furthermore, the hypothesis that job dissatisfaction correlates with skills shortage was not supported, meaning that workers may continue to work in the garment industry irrespective of the job satisfaction levels.

Following the testing of hypothesis, the summary of observed relationships among study variables indication coefficients is presented in Figure 4-4.

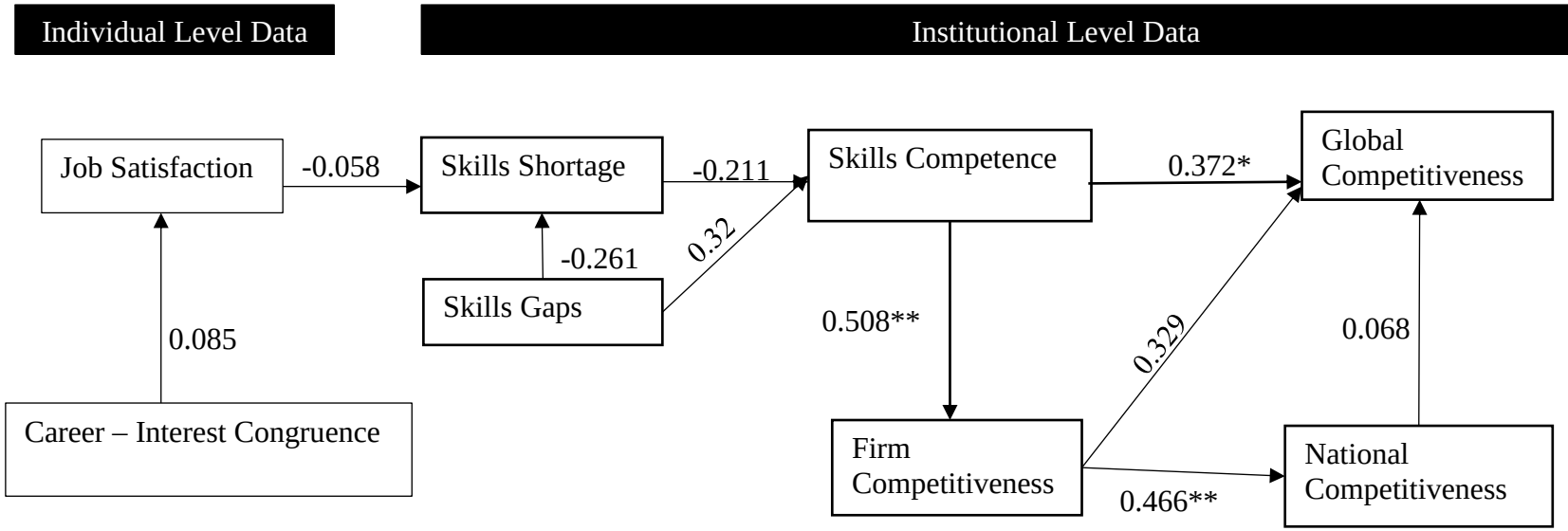


Figure 4-5: Summary of Observed Relationships among Study Variables Indicating Coefficients

*$p < 0.05$; **$p < 0.01$

4.2 Result of the qualitative data

In line the explanatory sequential mixed method adopted for the study, the qualitative study was undertaken to provide context to the quantitative findings The result of the qualitative data for garment firms and workers in the garment industry are presented in this sub-section.

4.2.1 General background of the seven selected garment firms

Four of the firms were registered Ghana Free Zone (GFZ) companies. Three were registered with the Association of Ghana Industries (AGI) making up a total of seven. In terms of firm size, two were large; three were medium and two were small size firms. Having identified the garment firms, representatives were chosen to speak on the perspectives of the garment firms in relation to issues under study. The occupational position of all the representatives were at the managerial level. Three of them were Chief Executive Officers (CEOs); two were Human Resource (HR) managers, and the rest were supervisors at the production unit. In terms of gender, three of them were females and four were males. All the respondents were above thirty years with the youngest being 36 and the oldest being about 67 years.

4.2.2 General background of 10 selected garment workers

The sample characteristics of workers include gender, age, occupational category and type of organization they work in. Out of the ten respondents selected for the study, seven of them were females and three were males. The youngest of the workers was 19 years and the oldest 45 years. The occupational categories were made up of four machinists, two

cutters, one fashion designer, one pattern maker, one technician and one quality assurance person. Five of the workers were selected from AGI firms and four from GFZ firms.

4.2.3 Identification of thematic areas for qualitative study

Based on the findings of the quantitative study and in lieu of the sequential explanatory design adopted for the study, thematic areas were developed (Part I) to form the basis of the qualitative study (Part II). Table 4.17 present the thematic areas identified for the garment firms and workers in the garment industry.

Table 4.17: Thematic areas for garment firms and workers

S/N	Themes	Components
1	Skills gaps	• Evidence of skills gaps • Reasons for skills gaps • Evidence of skills training to address skills gaps
2	Skills Shortage	• Evidence of skills shortage • Reasons for skills shortage: skills shortage as a problem or quantity or quality • Workers career aspiration and desire to quit: implications for skills shortage • Job satisfaction/dissatisfaction as a reason for skills shortage
3	Skills-led competitiveness	• Evidence of challenges with skills-led competitiveness

4.2.4 Evidence of skills gaps and reasons for skills gaps reported by garment firms

In the quantitative study, the garment firms reported skills gaps and shortages. Hence, in the qualitative process, both the workers and the garment firms were asked if they could confirm the presence of skills gaps and shortages. All the 10 respondents interviewed acknowledged that skills gaps and shortages existed in their garment firms. Their responses

confirmed the findings in the quantitative data. The following statements represent the views expressed by most interviewees regarding skills gaps:

> *"…eerrr(sic), initially when I started on my own I realized the skill level I was expecting from workers wasn't high, especially those apprentices, they had their own method of doing things and it wasn't of standard so I decided to go ahead teaching them how to sew. The skill level in the Ghanaian industry is probably not as high as what you will find elsewhere…"* (CEO 1, AGI firm)

> *"Yes, when I put up the signboard a lot of people will come, sometimes when they come and they even see the industrial machine they are afraid, they haven't used it before, they only know the normal machines and that, you see it's slow machine. When they come here it is a problem for us, we have to train the person for some time before they become used to our industrial machines but still the speed level is low*." (HR Manager 1, GFZ firm)

The garment firms were asked what steps they had undertaken to address the skills gaps. The most common response given by the garment firms was training the workers internally either by experienced Ghanaian co-workers in the firm or by expatriate working in the firms. On rare occasions, some firms send workers abroad to be trained. For example as one of the supervisors said:

> *"For the embroidery, we even have someone we took to China and Japan to go and learn"* (Supervisor 1, AGI firm)

The information about expatriates did not come up during the quantitative study, but it was evident in the interview responses that they played important roles in the garment firms. A few of the comments that reflect their role is presented as follows:

"*… If you pick our polytechnic graduates, they can never perform at that efficiency like the DTRT [one of the garment firms] because they have expatriates…"* (CEO 3, AGI firm)

"…So we have an expert trained by the expatriates and we have sent that person outside to go and learn and it is in such a way that he even services other companies…" (HR Manager 2, GFZ firm)

"….okay, this is what I have realized, that's why you see a lot of expatriates, their efficiency level is high and it's because they have expatriates, if you take DTRT, they have expatriates of over 40, they have close to 1600 employees…" (Supervisor 2, AGI firm)

Reasons for skills gaps as reported by garment firms

Result of the quantitative study showed that there were skills gaps in the garment firms. Hence, the garment firm representatives were asked to provide reasons for the skills gaps in the interview. In response, four broad reasons were given as explanations for the skills gaps. First, most of the respondents said the skills gaps were due to a mismatch between skills training and industry needs. As one respondent put it:

"…skill gap is basically the fact that our training system doesn't address the real issues that garment firms need in the production process. They are giving a general training on how to sew but sometimes the application of what they have learned is not easily transferable…" (CEO 2, AGI firm)

The second reason to explain skill gaps was about workers' inability to fitting into the production systems in the industry. For example, one of the respondent noted that:

"…..You see the industry is very big and to come out with one garment it goes through a whole lot of production processes. So if you bring one person he may be

specialized in a particular process and if you bring him and you want to use him for another process then that will be a problem" (Supervisor 1, AGI firm)

The third explanation given for skills gaps in the garment industry was the unwillingness of graduates to work in the garment industry. According respondents in the garment firm, sometimes only apprenticeship trainees from the informal sector with generally low skills in the labour market were available to work in the industries resulting in skills gaps. Finally, the fourth reason reported by the garment firms was the tendency of workers to quit after receiving training to address skills gaps. This was because of the belief among those workers that they had acquired enough skills to work on their own.

4.2.5 Evidence of skills training to address skills gaps as reported by the workers

The workers in the garment industry were asked about skills training to address skills gaps. All of workers interviewed admitted they had received training within the last six months and continued to receive training at the workplace:

"...Yeah, because those who do cut sometimes go on workshops organized by the quality control." (Worker 3, GFZ firm)

"It was a few weeks ago that some UN experts' from abroad came in to assist us with the training." (Worker 6, AGI firm)

Indeed some of the workers said their firms organized training for them before they were given contracts. The workers explained that the training they received upgraded their knowledge in garment construction to the extent that someday they could set up their own business or work on their own.

However, in as much as workers interviewed felt the training to address skills gaps were beneficial, it also empowered them to want to leave especially when their issues relating to salary remained unaddressed or would not improve over time. For instance, one of the workers felt that she could do well on her own and all she needed was some capital for her to quit,

> *"…Yes, this year I thought of that (quitting) but because the salary wasn't good. I couldn't save towards that and even if I have just one sewing machine I will begin my own work from home"* (Worker 1, GFZ firm).

4.2.6 Evidence of skill shortage and reasons for skills shortage as reported by garment firms

To collaborate or validate the findings in the quantitative data about skills shortage, the garment firms were probed. The garment firms acknowledged that they had skills shortages as reflected in the comments below:

> *"...yes, there is (Shortage), I don't always have enough and when I call my friends, everybody is complaining, especially during the festive occasions and even during the normal times people don't have enough workers, so I even sit down myself and sew. Everybody wants to be an entrepreneur so they will live with you for a while and then go, after you have trained them. We do not have enough people learning fashion, as compared to food and nutrition, so we need to do more of career guide and motivate students to be interested in fashion…"* (Supervisor 2, AGI Firm)

> *"Those who repair machines, I don't know whether we have them here, especially, the latest machines. There is this one guy who goes round, he comes here and goes to big companies in Tema, then he goes to Kumasi. If I call him right now, he will even tell me he is in Sunyani… one person."* (HR Manager 2, GFZ firm)

A number of reasons were given by the garment firms to explain why there were skills shortages. Five of the representatives acknowledged that it was due to the absence of expatriates who leave from time to time. When expatriates leave, the available workers who take up the new roles struggle to sustain the level of proficiency as one of the respondents observed:

> *"…the shortage is everywhere because when the expatriates leave, we are not able to sustain what they are doing; there is no succession so when they leave what happens is that what they were doing is off."* (CEO 1, AGI firm)

This means that although there may be other workers who could perform that role because those workers do not possess high skills compared to the expatriates, suddenly the absence of the expatriates created skills shortage in the firm.

Another reason given by the garment firms to explain skills shortage was the tendency of workers to quit once they feel they have acquired enough skills, either to work on their own or work for another firm. Indeed, of all the reasons given for skills shortage, workers quitting was the most common response given by the garment firms - as illustrated in the following comments:

> *"….Everybody wants to be an entrepreneur so they will stay with you for a while and then go after you have trained them…"* (CEO 1, GFZ firm)

> *"...there is shortage of skilled workers in the industry because all of them are setting up their individual businesses so they are not willing to work for someone else and so they start their business and they also can't find workers to work with them and so it's a cycle…"* (Supervisor 2, AGI firm)

> *"…sometimes when they are with me here and then somebody will tell them over here is better, may be the money. You know if the person is not trained he is not*

> *used to industrial working, people that I have trained, three or four, without informing me, they left. Now, I wanted to find out why they left. The mentality is that now they have had the training so they can do anything at all..."* (HR Manager 1, AGI firm)

Interestingly, from the garment firms' perspective, all the interviewees were silent about low salary as the reasons why most of their workers might be leaving or quitting. Some of them said they had increased salaries and yet workers still left. Others also said they even registered their workers under Social Security Schemes and still some workers left. As one respondent put it:

> *"……. when we were small there were certain things that we didn't provide but now we do, I register them, I pay their SSNIT for them to know that they have a future…still some workers leave"* (CEO 2, AGI firm).

4.2.7 Workers career aspiration and desire to quit: implications for skills shortage

In the quantitative analyses, the result showed a high attrition rate of workers in the garment industry. Therefore, the workers were asked about their career aspirations, desire to quit and whether or not others, in the past had quit. This information was sought with a view of providing an in-depth perspective on skills shortage. The responses from the interviews largely pointed to the likelihood of workers quitting in the next five years. When workers were quizzed about their career aspirations, none of them gave any response that showed that they intended to stay in the work and progress to management or higher positions in the firm. Some of the responses they gave included the following:

> *"……Early on I told you, I would want to operate from my own company because I'm a creative person so I would want to go to school and study something attached to what I do now. I want to be one of the big designers."* (Worker 2, GFZ firm)

> *"Ok the next ten, five years I want to see myself been a boss of my own* (Worker 1, AGI firm)

Quitting the job to set up own shops was the most common response. However, others had aspirations completely different from the garment industry such as:

> *"……God willing I want to become a graphic designer or a photographer so when get the chance to go to the tertiary… I will go and study either graphic designing or photography.* (Worker 7, AGI firm)

> *"……..In the next five to ten years I will call myself a teacher at the same time a trader."* (Worker 6, GFZ firm)

Thus, based on this interview, the possibilities that these workers wanted to leave the industry in the next five years was realised.

4.2.8 Job satisfaction/dissatisfaction as a reason for skills shortage

The analysis of quantitative data has shown that more than half of the workers were satisfied with their jobs. In furtherance to that workers were interviewed about job satisfaction and reasons for job satisfaction. Among those who were satisfied with their jobs, these were a few samples of their responses:

> *"... Looking at Ghana right now there is no job and the one that you have, is putting food on our table. Whether it is good or bad you have to do it…"* (Worker 2, AGI, firm)

> *"…Oh yes (satisfied with job) because at the end of the month I will get something small but 'no' because the salary to (SIC) is not enough…"* (Worker 1, AGI firm)

> *"…Oh! I'm ok because I haven't got (sic) any work to do apart from this one… if I leave it I mean I don't have a work to do. I cannot save. Therefore, any work or job that I get I can do it until God show (sic) me the way that I should…"* (Worker 5, GFZ firm)

As noted from the comments above, most of the workers explained that they were satisfied with their job due to the current economic circumstance in which uncertainties about job prospects exists.

For those workers who were not satisfied with their jobs, all of them cited salary as the main explanation. The problem with salary was not just the amount, some of the workers complained about salaries delays as illustrated in the following comments:

> *"... It's all about money (salary). The money they pay and the manner in which they pay is the issue…"* (Worker 3, AGI firm)

> *"…It's the salary. There are times that you yearn for the money but it is delayed…"* (Worker 1, GFZ firm)

> *"...That time dieeer (sic) we had, when the month ends, even that time we were having a problem with our salary. Even the money was not all that enough and they will be tearing (SIC) our tax and SSNIT and some absent and this one so the time that the money will get to you is small so we were complaining. When the owner of the job said let me add some to it…"* (Worker 2, GFZ firm)

Although most of the workers did not mention their specific salary, the impression from the interview was that salary levels were quite low.

4.2.9 Evidence of skills-led competitiveness as reported by garment firms

All the representatives of the garment firms agreed that garment firms in Ghana had challenges with competitiveness. One of the reasons cited for skills-led competitiveness was poor execution of contracts, as illustrated by the comments below:

> *"....Let me give you case study. Sometimes the fire service uniform was given to someone to sew and the uniform was given to the fire service, the sleeve could not fit, it was smaller, they were having quality issues across. Now, when they took it to Asia it was cheaper, after exporting it, it was cheaper and they will produce at efficiency level so the delivery was very good and the quality, very high. Therefore, I know that almost about 60% of our security uniforms are done outside..."* (HR Manager 2, GFZ firm)

> *"...yeah, let me give you an example, lucky (name withheld), I don't know if you've heard about it, I mean they were producing doctors' lab coat, nurses uniform for an American hospital and they had two companies, they had a company here and a mother company, was it in Asia or so. Now, during the Christmas there was demand for the lab coat but they could not meet their deadlines. I learnt one of the expatriates during the time went to the store room, took some of the rejected lab coats, added them to the package. When the package got to the US, the opened the container and it was quality, quality, problems that was the end of the company."* (CEO 2, AGI firm).

Some of the respondents also acknowledged that skills gaps and shortages had affected their ability to work efficiently and to compete at the national and international level.

> *"...I think (skills gaps and shortages) had negative effect on our competence, I will not be able to tell the extent, I'm not able to sew on time for customers, I'm not able to meet deadlines and all, sometimes to you end up closing late. So it has really affected me..."* (CEO 1, AGI firm).

4.2.10 Summary of qualitative findings

The following are a summary of important findings made in relations to the qualitative study:

i. The interview results obtained from the garment firms validated the results in the quantitative data about the extent of skills gaps and shortages prevalent in the garment firms. The study found different reasons that explained the prevalence of skills gaps, some of which had to do with the mismatch between training and industry needs, workers' difficulty in adjusting to different production systems and unwillingness of most fashion graduates to work in the garment industry.

   However, in the qualitative findings, it was discovered that most of the garment firms, especially those in the Free Zones enclave, recruited the services of expatriates to address skills gaps and shortages. In addition, workers who were intermittently trained to address skills gaps tended to quit because of the belief that they had enough skills to work on their own.

ii. With regards to skills shortage, the responses from the interview sessions confirmed the evidence from the quantitative study that skills shortages occurred as a result of insufficient qualified workers in the Ghanaian labour market (quantity issues). Even with skills areas that appeared to have sufficient workforce in the labour market, there were quality issues, the skills levels of those sufficient workforces were lower than expected resulting in the shortage of qualified applicants among the workforce.

iii. The study also discovered that workers were most likely to quit in the next five years because they felt they would be better off working on their own than to aspire

to progress to management level or higher positions in their respective firms. Thus, there is a likelihood of high attrition among the current labour.

iv. Another finding of the study was with regards to job satisfaction. The study found that given the current economic circumstance with little or no opportunities for employment prospects, the workers were glad to have a job at least. Nevertheless, they had concerns about salaries and career prospects which they said, if it did not improve over time, they would quit working in their firms.

v. Finally, concerning skills-led competitiveness, the garment firms representatives explained that challenges in executing contracts were evidence of low skills-led competence and that skills gaps and shortages had affected their ability to compete with their competitors.

4.3 Discussion of the results

4.3.1 Skills gaps and shortages in the garment firms of Ghana

Globally, the manufacturing industry is fast transitioning from labour to capital-intensive production due to new technologies but in the garment-manufacturing industry, such transitioning is very slow because technology has not yet successfully developed alternative mechanism to replicate the dexterity of the human hand for sewing (ILO, 2015). Therefore, there is high demand for skilled labour in garment manufacturing worldwide (Tyler, 2008). Until a new technology can replace humans in sewing, many garment firms worldwide will continue to rely on skilled-labour. Such labour must however, be devoid of skills gaps and shortages. According to Morris and Reed (2008), when garment firms experience skills gaps and shortages, it signifies business inefficiency and recruitment challenges. Other studies by Cao et, al. (2014) and Deloitte Touche Tohmatsu Limited and

U.S. Council on Competitiveness (2016) showed that skills gaps and shortages affected the ability of firms to compete favorably in the garment sector.

Studies conducted across some of the most competitive manufacturing countries as reported by Aring (2012) showed that skills gaps and shortages are prevalent, not just in the developing countries but also in the developed countries (See Table 2.12 and Table 2.13). Although the data reported by Aring (2012) was not specific to the garment industry, it still provided an important overview for the need for skilled-labour in the advanced countries. Concerning the garment industry, Pye (2004) reported that in Britain about 56 percent of firms needed garment technologist, 51 percent of firms needed designers and about 64 percent of firms were in need of trainees. In South Africa, Morris and Reed (2008), reported that skills gaps in the garment industry was about 45 percent among plant and machine operators and about 51 percent among senior officials and managers. Most shockingly, Morris and Reed (2008), also reported 75 percent skills shortage for machine and plant operators as well as senior officials and managers implying that the garment industry was no exception in terms of skills gaps and shortages.

The findings of this study in Ghana on skills gaps and shortages are consistent with the observations in other countries and showed that the garment firms were also experiencing skills gaps and shortages as reported by Pye (2004), Morris and Reed (2008) and Aring (2012). However, unlike their studies that used broad categorisations to determine skills gaps and shortages, this study identified specific skills in its determination of skills gaps and shortages. Specifically the study found that the skills areas that had the highest skills gaps were computer aided applications, quality assurance, and machine repairs while for skills shortage, the highest shortages were in the computer aided applications and

pattern/fabric cutting (See Figure 4-1). These findings are important because prior to this study, only anecdotal assertions about skills challenges had been made in newspaper reports (Hinshaw, 2012) as the pervasive nature of skills gaps and shortages were undocumented in any publication. This study described for the first time how the pervasive nature of skills challenges were affecting garment production. Most of the garment firms acknowledged the effects of skills gaps and shortages on their firms and described how it affected their production and ability to function to some extent. Some of garment firms in the study observed that they had to rely on expatriates due to the skills gaps and shortages.

Multiple reasons for the skills gaps and shortages in the garment sector deduced in this study. These include, high attrition rate in the garment firms, mismatch between training and industry needs and low number of graduates willing to work in the garment firms among others. According to Morris and Reed (2008), Aring (2012) and ILO (2015), high attrition rate is one of the main causes of skills gaps and shortages in some manufacturing sectors. In Ghana, this study found that high attrition rate had resulted in a situation where garment firms frequently lost skilled labour (skills shortage), resulting in constant recruitment of new workers whose skills were relatively low (skill gaps). The reasons for the high attrition rate found in this study were consistent with those that were outlined in the literature review (Aring, 2012). From the findings of the study, most workers were dissatisfied with salary levels or general remunerations in the garment firms and this may have influence on their decision to quit in the future and set up their own business to earn more income which collaborates the studies of Holland (1997), Judge and Karsen (2001) and the Gallup Organization (2002).

Another cause of skills gaps and shortages found in this study was the mismatch between skills training and industry skills needs. This problem was highlighted in the literature review (See Table 2.16) and surprisingly, it is reflected in the results of the study See (Figure 4-1). For example, in the literature review (Refer to Table 2.16), it was observed that many garment workers were not trained in sewing machines repairs as an important skills area. True to that observation, many garment firms reported a shortage of sewing machine repairers implying that disconnect between industry needs and curriculum reflected as a skills gap and shortage in the garment industry. When workers are employed with such disconnected skills, they become a burden to the garment firms who often have to retrain such workers. That is why most of the garment firms, especially those that work within the Free Zones enclave reported recruiting expatriates to help address skills gaps and shortages.

Finally, the low number of tertiary graduates working in the garment firms was also another cause of skills gaps and shortages as observed from the findings. Unlike other garment producing countries like China, the US, South Africa and Cambodia where, according to Bernstein and Johnson (2007) and Cao et, al. (2014), a high number of skilled graduates work in the garment industries at various levels, the situation in Ghana was different. This was evident in the demographic data where only a few of the workers had tertiary level training in spite of the fact that over a dozen academic institutions currently train students in Fashion or Clothing programmes that were suited for lower, middle and managerial levels in the garment industry (See Table 2.14). According to the responses from the garment firms (presented in page 163), graduates in Ghana prefer to set up their own businesses instead of working in the garment firms to earn more from working on their

own compared to working in the garment industry. Hence, it is difficult for the garment firms to recruit and retain such graduates over a long period resulting in the absence of such qualified graduates in the garment firms and thus causing skills gaps and shortages as noted in the findings (See Figure 4-1). It is however unclear whether indeed, when graduates work on their own they are able to earn more than working in the industries. Studies by Pye (2004) and Morris and Reed (2008) reported that work in manufacturing industries (including garment making) were becoming less attractive to young people, including graduates worldwide, because of the perception of low earnings. Hence, if it has been found in this study that graduates in Ghana are not working in the garment firms due to low pay or poor perception, perhaps it is not so surprising. Nevertheless, the absence of such qualified graduates reduces the availability of a skilled workforce in the labour market for the garment firms thereby creating skills gaps and shortages.

4.3.2 Skills-based competence reported by garment firms

Skills-based competence is a very important resource to garment producing countries and firms because of the extreme competition in garment sector (Kunz & Myrna, 2011). Historically, manufacturing capabilities have been shifting among countries and regions due to factors such as technology and labour (Dickerson, 1999). In the past North American and European countries dominated global manufacture but currently ASEAN countries are the preferred destination due to its cheap labour (Kunz & Myrna, 2011). Countries like Bangladesh, Cambodia, China, and Vietnam among others, now dominate in low-cost large-scale garment manufacturing whiles most luxurious, smart and technical garments are still being produced in developed countries such as France, U.S, Germany and Italy.

Although, African countries like South Africa, Egypt and Lesotho are often recognised as major manufacturers, African and Middle East countries are usually not recognised as dominant garment manufacturing hubs (Kunz & Myrna, 2011). As a result, skills-based competence is often perceived to be relatively low in Africa and Middle East regions. There are also perceptions that doing business in Africa is risky. For example, the U.S. International Trade Commission Report (2008) stated that Sub-Saharan Africa was not a particularly low-cost area for production of textiles and apparel because of high labor cost, low productivity, long lead times and high cost of other inputs such as raw materials compared to their Asian counterparts. The fact that the type of garments often produced from Africa are mostly simple straight stitching items that are low-end mass-produced involving custom-made articles also give credence to the perceptions about low skills-based competence (Rolfe and Woodward 2005).

Ghana is no exception as far as the observations about low skills-based competence is concerned as observed from the study. Indeed studies by Fianu and Zentey (2000), Hinshaw, (2012) and Kuma-Kpobee (2013), reported low skills-based competence among fashion designers and workers in the garment sector, although unlike this study, their research focussed on only a few skills areas. Thus, after extending the skills areas and assessing skills-based competitiveness, many of the garment firms consider themselves as having ‘above average’ skills-based competence specifically in fashion design, pattern making, pattern cutting, merchandising, production management, quality assurance, machining, finishing and pressing. The exception was computer-aided applications in which many of the garment firms indicated ‘below average’ competence (See Table 4.8).

The findings of this study contradicts not only the general perception of low skills-based competence perceived about Ghana, but also the reports by Fianu and Zentey (2000), Hinshaw, (2012) and Kuma-Kpobee (2013). More so, when the garment firms had also reported skills gaps and shortages (See Figure 4-1). This raises an important question: why do the garment firms now consider themselves to have 'above average' skills-based competence? There are three possible explanations. First, explanation is in regards to the role of expatriates who some of the garment firms have recruited to improve expertise and increase competence. This was particular related to the garment firms in the Free Zone enclave that acknowledged the fact that they recruit expatriates from different countries to fill the gap in garment production. Given that these expatriates bring along their experiences and expertise, it could explain why some of the garment firms considered themselves as 'above average' competent.

The second explanation is in regards to efforts to consider and pursue on-the-job training for workers. The garment firms pointed out efforts towards on-the-job training from time to time in order to raise skills levels which was often carried out by the expatriates. In some rare cases, workers were sent to training facilities within and outside the country to acquire skills. Thus, it is possible that with the role of expatriates and on-site training given to workers, many of the garment firms consider themselves competent as indicated in the findings.

The final possible explanation on why many garment firms considered themselves 'above average' could be in relation to the type of garments sewn in Ghana. Perhaps many of the garment firms reported 'above average' competence simply because of the simple straight stitching items, that are mostly low-end mass produced items, which do not require

sophisticated application of skills. These types of garments are known to be produced in Ghana and in the past Ghanaian firms mostly competed to produce these garments (Quartey, 2006; JICA, 2008; Hinshaw, 2012). Hence, having had the experience and the expertise to produce these items, many Ghanaian firms now consider themselves as having 'above average' skills-based competence.

Nevertheless, an interesting observation that can be drawn from the findings is that despite the challenges about skills gaps and shortages, the garment firms in Ghana do have some skills competence which, given the right conditions could be developed into a competitive advantage.

4.3.3 Skills-led competitiveness of garment firms in Ghana

All countries have some level of skills competence with which they engage in garment production, however, it is the level of competitiveness that determines dominance on global and national scenes (Goransson, Jonsson, & Persson, 2007). Competitive advantage occurs in different forms based on factors such as taxation, skilled labour, low cost manufacturing among others (Porter, 2008; Liargovas & Konstantinos, 2010; ILO, 2015). This study, however, focussed on skill-based competitiveness to determine the extent to which Ghanaian firms were competitive at the national and global levels.

Overall, it was found that only about half the number of garment firms reported being very competitive at the national level, while at the global level, the number of garment firms that reported being very competitive were just about a quarter (See Figure 4-2). Thus, more garment firms reported being 'very competitive' at the national level than at the global

level. The finding implies that skill-based capacity to compete was lower at the global level than at the national level among the garment firms in Ghana.

There are some possible explanations for this finding. The existence of skills gaps and shortages may have affected the garment firms' ability to compete nationally and globally since garment production is labour intensive probably resulting in their inability to properly execute contracts. According to Rothaemel, (2013); Kapelko, (2017); Goransson, Jonsson, and Persson, (2017), internal resources of firms such as skilled personnel are very important factors in determining competitiveness. Hence, when firms experience any form of imbalance with regards to skills resources as noticed in the finding, it is not surprising that they will be less competitive.

Another fact that could also explain the reason why a relatively low number of garment firms have skills-based competitiveness could stem from the differences in production process. According to Fianu and Zentey (2000) and JICA (2008), garment production in Ghana, is predominantly custom-made, involving whole unit production of articles with a relative small number of workers. This custom-made process takes a relatively long time and involves basic non-industrial machinery resulting in low production capacity (Quartey, 2006; JICA, 2008; Hinshaw, 2012). However, when such custom-made processes are needed to be applied to mass production processes in which the skills levels are required to be faster and abundant, not all the Ghanaian firms have the capacity to compete. Hence, the inability of many Ghanaian firms to compete on the global scene. Indeed some researchers including Hoefter (2001) and Hinshaw (2012) have opined that perhaps the over reliance on custom made garments may have affected the development of the large-scale garment production in Ghana. Hoefter (2001, p. 156) specifically pointed out that:

> *"One disadvantage for the garment manufacturing industry is the tradition of demanding tailor-made clothing. With the absence of large production runs, there have never been standardized sizes in Ghana. In particular in the afrocentric segment, manufacturers struggle with the tight quality and size requirements of overseas customers".*

Nonetheless, the findings of this study about skills-based competitiveness are important and have wider implications for the garment industry's participation in the global value chain. This is because the findings raise concerns about the development of the garment sector and its ability to generate employment as well as foreign income to the national economy, given the level of low skills-based competitiveness as reported in the findings. According to the Ghana Statistical Service (2016), garment production contributed only 3% of added-value to the national economy although most of the manufacturing firms in Ghana are engaged in garment production.

As noted in the literature, a survey of the global leading manufacturing companies indicated that skills was the highest determinant for productivity and profit, as noted by Deloitte Touche Tohmatsu Limited and the U.S. Council on Competitiveness (2016). Thus, if the findings, as shown in the study, are not addressed, Ghana's ability to engage and reap the benefits from the global production value chain will continue to decline.

The hypothesis of the study ($r = 0.505$, $p < 0.01$) showed a correlation between skills competence and skills competitiveness at the global level (See Table 4.16). This provides an important guideline on how the issue of low competitiveness could be addressed. The hypothesis implies that firms with high competence also have high national skills competitiveness. This confirms similar studies by Berdine et. al, (2008) and Cao et, al.

(2014) which found that skills was one of the most important determinants of competitive advantage in the garment industry.

4.3.4 Competitive performance of Ghanaian firms in relation to skills

According to the Global Competitiveness Index that surveyed over 500 CEOs, high skills were ranked as the most important driver of firm competitiveness (Deloitte Touche Tohmatsu Limited and the U.S. Council on Competitiveness, 2016). The relationship between high skills and competitiveness was also explored by Goransson et. al, (2007); Daniels, (2007) and Cao et, al. (2014), all of whom overwhelmingly agreed that higher skills led to competitiveness. Therefore, to provide theoretical underpinnings to all the findings related to skills in this study, the Resource Based View (RBV theory) was used to analyse skills performance and to ascertain whether skills levels in Ghana have any competitive implications at national and global levels. Although the study had made some adverse findings about skills levels, competence and competitiveness, the use of the RBV theoretical approach was necessary in order to determine the overall status of skills in the Ghanaian firms. The result of the RBV analysis showed that although Ghanaian firms possessed valuable skills in garment construction, the performance capabilities of the skills were not unique or exceptional. As a result, the skills performance in Ghana did not confer any meaningful competitive advantage to the garment firms (See *Table 4.12*). In other words, Ghanaian firms are vulnerable to skills-based competition. This finding is important because it provides theoretical evidence about the competitive performance of Ghanaian garment firms in relation to other competitive countries (Europe, North America and Asia) where, as noted earlier, studies by Rolfe & Woodward, (2005), Kunz and Myrna, (2011) and Cao et, al. (2014) had found higher skills.

The findings collaborate the views or perceptions suggested by Rolfe & Woodward, (2005), USITC (2004), Mushita, (2001) and Hinshaw (2012) that despite trade tariff concessions and other favorable export conditions, Sub-Saharan African regions including Ghana do not have the necessary skills competence to compete globally or hold a competitive advantage in garment making. Hence, the reason why the sub-region including Ghana is not recognized as a major manufacturing hub with the exception of a few countries like South Africa, Lesotho and Egypt that are known for high quality selected garment products (Kunz & Myrna, 2011).

The reasons why the garment firms do not have a skills-based competitive advantage could be attributed to some of the important findings in the study, including the pervasive skills gaps and shortages and below average firm and skills competitiveness, not forgetting deficiencies in key skills needed for garment production such as computer aided manufacturing, machine repairs, quality assurance among others.

Elsewhere, analysis of some of the most successful garment manufacturing giants using the RVB theory have helped to shed light on why they are competitive. For instance, Goransson et, al. (2007) analysed ZARA and H&M using the RBV theory and found that both firms use high skills to their competitive advantage. Using high skills enabled ZARA to produce with short-lead times thereby meeting customer satisfaction while H&M relied on high skills of its independent suppliers to outsource production (Keiser and Garner, 2012). Similarly, Cao et, al (2014) also analysed the clothing industry of China the largest exporter of garments using the RBV theory and identified ‘skillful workers’ as one of the fundamental resources Chinese firms’ survival and competitiveness. Thus, the studies by Goransson, et, al. (2007); Cao et, al (2014) including those by Bernstein and Johnson,

(2007); Daniels, (2007) not only provide evidence that the higher the skills performance, the more competitive the garment sector but in addition support the use of the RBV theory in determining competitive advantage of garment firms.

4.3.5 Firm competitiveness of the garment firms in Ghana

Globally, apart from skills performance, other factors such as low-cost production, niche focus, brand loyalty, quick response and the use of technology also determine the competitiveness of firms. These factors are often considered as part of a firm's resources that can be used to obtain competitive advantage (See Table 2.19) However, low-cost production and niche focus are acknowledged in literature as the leading drivers of a firm's competitiveness (Porter, 2008; Tyler, 2008; ILO, 2015; the U.S. Council on Competitiveness, 2016). Therefore, the study sought to determine whether Ghanaian firms were below average, average or above average in terms of the factors that determine firm competitiveness.

The result showed that with regards to the firm's critical level of competitive factors, many of the garment firms were predominantly average in most factors. With average performance in a firm's critical level of competitive factors, the result implies a certain level of institutional weakness in the garment firms when considered from the global competitive point of view which means that most Ghanaian firms were competitively disadvantaged. For example, the results showed that most Ghanaian garment firms were comparatively weak in terms of low-cost production. Being weak in low-cost production meant that, according to research by Berdine et, al. (2008), Cao et, al. (2014) and Goransson et, al. (2017) garment exports from Ghana could be more expensive than other

competitors in the ASEAN countries that produce the same products at lower prices. Therefore, Ghanaian firms are vulnerable to strong competitors.

The result also showed that the garment firms were not very competitive in applying any niche focus strategy, which means they had little or no added value in their garment products. According to a research by Porter (1990) and Lalinsky, (2013), when there are no differences in products through added value or niche focus, the more competitive producer often gains the competitive advantage, meaning that Ghanaian firms with low niche focus will lose out to firms in other countries with high niche focus. Porter (1990) and Lalinsky's (2013) studies are supported by other studies including research by Lessard, (2008); Berdine et; al. (2008); Palladino, (2010); Mastamet-Mason and Ogembo--Kachienga, (2012). Therefore based on the findings that Ghanaian firms are not very competitive, as expected, especially in the current liberalized and competitive trade environment, there is no doubt that they garment production added only 3% to the GDP.

Overall, the findings of the study confirmed the observations of Hoefter (2001, p.161) who noted that:

> *"Ghana's textile and garment industry does not benefit from basic factor advantages. The capital-intensive textile industry has no other natural advantages, and it has not been able to innovate and build up other determinants of advantage while it still benefited from heavy government support. The garment industry benefits from comparatively low production costs, but has not been able to transform this into a competitive advantage. With an average size of 17 workers, companies are not able to build up economies of scale and produce the large quantities as required for exportation. What is lacking is management know-how to run large firms, and to increase the productivity of workers to international levels."*

It is important to examine the reasons why the garment firms were not very competitive. This is because Ghana's manufacturing sector, including the garment sector, is bedevilled with many bottlenecks that often impede the manufacturing sectors' ability to be more productive or competitive. Though those bottlenecks were not the explicit focus of this study, there are several internal and external reasons that explain the reason why the firms are not very competitive. According to USITC (2004), JICA (2008), Fianu and Zentey (2000), Kuma-Kpobee, (2013), some of the internal reasons emanating directly from the garment firms include poor finishing of products, inability to create original designs, use of outmoded technology, low managerial skills and low productivity, among others. Externally, according to research by Quartey (2006); JICA, (2008); Abor and Quartey, (2010), GNA (2016) and AGI (2017), some of the bottlenecks include lack of government support, high taxes, gross undercapitalization, difficulty in accessing finance, high lending rates, high utility bills, multiplicity of taxes and currency depreciation . Undoubtedly, these bottlenecks weaken the ability of the firms to improve or invest in the firm level competitive factors, which, as shown in the findings, were not very competitive.

To help address the uncompetitiveness of the firms, the hypothesis of the study provided a way to do that. This is because the hypothesis of the study that skills competence correlates with firm competitiveness was supported ($r = 0.505$, $p < 0.01$), meaning that there was a statistically significant correlation between skills competence and firm level competitiveness. This implies that firms with relatively higher institutional skills levels tend to also have higher firm competitiveness. Thus, if Ghanaian firms improve their human capacity, it would also improve the firm's competitiveness.

4.3.6 Workers' career-interest congruence and job satisfaction

Holland's Theory of Vocational Interest (1997), has been used for a large number of publications to establish the relationship between career interests and career choices (DeSantis & Quimby, 2004; Brown & Lent, 2012). Essentially, Holland's Theory is often used to explain the situations in which workers may not be satisfied with career and life aspirations or life in general. Such situations often arise due to career incongruence, as noted by Ciechalski (2002); DeSantis and Quimby, (2004); Brown and Lent (2005).

The theory was used in this study with the assumption that career incongruence could explain why workers quit, difficulties in work environment and work motivation, or job dissatisfaction that impact skills shortage. The result of the study showed that a little over half of the workers had career incongruence, meaning their current jobs did not match with their career aspirations. Per Holland's (1997) theory, such a situation should lead to job dissatisfaction. Instead, there was no difference between those with congruence and incongruence with regard to job satisfaction. In other words, contrary to the Holland's Theory of Vocational Interest, career interest incongruence failed to predict job dissatisfaction in this study. Therefore, the hypothesis was not supported ($R = 0.085$, F (1, 127) = 0.928, $p > 0.05$)

There are two possible reasons why Holland's theory did not predict job satisfaction in this study. First, it could be as a result of environmental differences between Ghana and the United States, where the theory was originally propounded. This is in line with considerations made by Holland, (1997) who admitted that geographical and ethnic factors could potentially serve as barriers to the application of his theory in other jurisdictions. Hofstede, (1980) grouped nations in the world according to their prevailing cultural

attributes. Using this classification, Rounds, and Tracy, (1996) found that countries with individualism as their fundamental cultural attribute (which is also the prevailing fundamental attribute in the United States), fit Holland's theory better than those that emphasized collectivism such as Ghana.

However, economic disparities could have been by far the greatest cause of variation between the results obtained from this survey and the hypothesis. It was apparent from the qualitative study that many of the workers had socio-cultural anxieties about unemployment and limited opportunities given the low skills they possessed. With such a background, many of the respondents felt that their current jobs were the best they could get under the present dire economic circumstances and that these jobs offered them an alternative to working as self-employed tradesmen with no monthly guaranteed income and no pension funds after retirement. Their condition resulted in what Alderfer, (1998) refers to as the Frustration Regression Principle (based on Alderfer's Existence Relatedness and Growth (ERG) theory). Since the workers felt they could not fulfil their higher aspirations because of their socioeconomic circumstances, they were satisfied with that at least, they had a job. Thus, the Frustration Regression Principle explains the reason why many workers reported job satisfaction in spite of career incongruence.

Although the result of the career incongruence did not predict job satisfaction as expected, it did not mean that workers were satisfied with all aspects of their job. This is because analyses of the data revealed many of the workers were dissatisfied or ambivalent about pay, promotion and fringe benefits. In fact, the workers stressed their dissatisfaction with the time and amount of money they received as salary. Some respondents indicated that the dissatisfaction with salary, which they perceived to be low, was the biggest factor in

deciding whether to quit or stay in their current jobs. According to Tyler, (2008), Kunz and Myrna (2011) and ILO (2014), in the garments industry worldwide, emoluments such as fees, compensations or benefits are getting lower due to competition for low cost production and also in the garment industry. Vandyck (2015) also noted in her study that workers were unhappy with salary issues in the garment industry. The implication from the foregoing is that, workers would most likely quit at some point, then which will create skills shortage and consequently impact the garment industry negatively.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

This study was necessitated by the need to determine the competitive performance of garment manufacturing firms in Ghana. The study focused on examining the skills gaps and shortages in the garment firms of Ghana, establishing the level of firm competitiveness in the garment sector and analysing the competitive performance of the garment sector among others. In line with the research objectives, this chapter presents the discussions of findings with the relevant conclusions drawn from those findings and discussions. The limitations of the study, recommendations and contribution to knowledge and practice are also presented.

5.1 Conclusions

In consonance with the objectives of the study, the following conclusions were outlined. The conclusions are arranged in relation to each specific objective.

1. There are several formal and informal avenues for training workers in garment manufacturing, but only few of those, who receive training avail themselves to be employed in the labour market. For those who avail themselves, the study found that they either lacked the requisite skills to work efficiently or the number of qualified workers needed fell short. As a result, the garment firms in Ghana were bedevilled with skills gaps and shortages. These skills gaps and shortages, as shown in literature, affect the efficiency of garment production.
2. Secondly, many of the garment firms reported that they had the requisite skills-based competence for garment manufacturing. However, analyses within the context of the RBV theory showed that the level of skills-based competence possessed by the

garment firms were generally low or basic. With such low competence, the garment firms were vulnerable to competition from countries around the world where skills-based competence was higher.

3. Thirdly, due to low-level utilization of some competitive factors, like low cost production, niche focus, branding and technology among the garment firms, many of them were not very competitive at the firm level. Therefore, a competitive advantage is generally lacking in the garment industry of Ghana not only because of skills, but because of other competitive factors as well.
4. With regards to job satisfaction, although some workers were dissatisfied with salaries and promotion opportunities, majority of workers were generally satisfied with their work in the garment firms. Following the testing of hypothesis on the relationship between the workers' Career-Interest Congruence and job satisfaction, the result of the hypothesis was not significant meaning that workers Career-Interest Congruence did not account for job satisfaction and skills shortage.
5. Given that the garment industry is one of the most competitive sectors in the global economy, the many of the garment firms in the study had relative low competitive levels at the national and global levels. Considering the performance between the national and global levels, more garment firms were relatively competitive at the national level than at the global level.
6. Using the RBV Theory, the competitiveness levels of the garment firms were competitive parity instead of sustainable competitive advantage. The RBV theory provided an overall assessments of the skills-based competitiveness of the garment

firms and it showed that overall, garment manufacturing firms in Ghana are less competitive.

5.2 Limitations of the study

In every research study, there are potential limitations that must be identified and discussed to provide important context within which the findings and recommendations of research are understood and implemented. For this study, two potential limitations were identified. First, the study was a cross-sectional survey from which correlational relationships were established among the variables or hypotheses. Unfortunately, a longitudinal study was not possible because of the limited time available for the work. Therefore, one limitation of the study is that it was only able to establish correlation and not causation due to the cross-sectional survey method adopted for the study. However, the correlations also provided useful insight based on which further longitudinal studies could be conducted.

The second limitation of the study was the use of subjective measures of firm competitiveness (employers were required to rate their firm competitiveness) instead of objective measures such as product data, sales revenue, market share. Such data were difficult to obtain from the employers because they were unwilling to share them. Regardless of this potential limitation, evidence suggests that subjective measures were as good as objective measures of competitiveness (Zulkiffli, 2014).

5.4 Recommendations

Based on the conclusion of the study, the following recommendations were made for the attention of individuals and organizations mentioned in the study as beneficiaries or responsible for policy implementation and change:

1. The study found that there was a mismatch between the skill needs of the garment industry and the pool of skills in the labour market. In Ghana, it is often the practice that when training people for garment making, most training institutions only focused on limited skills towards self-employment, using rudimentary tools and equipment. As a result, skills and expertise that are relevant for large-scale production or industries are de-emphasized or left out of the training process. Skills such as computer aided designs, quality assurance and pattern making are considered to be unsuitable for immediate self-employment. Hence, people who are being trained for self-employment are not often taught these skills. This creates skills gaps and shortages. Therefore, it is recommended that standards and curriculum development at all levels of education should consider the needs of industry and include industry specific skills as part of the training. This can be done through some sort of liaison between industry and academia under the auspices of COTVET and AGI so that the industry can influence curriculums towards industry level mass production skills.

2. It was found in the study that skills-based competitiveness in the garment industry was low. Although many of the garment firms reported above average skills competence, the analysis of skills performance showed that the skills levels were just basic, which implies that Ghanaian firms are vulnerable to skills-based competition. It is therefore recommended that there should be a conscious attempt to build skills capacity in the garment sector by the garment firms. To build skills capacity, garment firms could invest in constant on-the-job training of their workers and adequately motivate them to remain in the firm after their training. They could also invest in new and improved

machinery and train workers to use such machinery or collaborate among themselves to sponsor people to go abroad to acquire new skills and then come and train workers. Alternatively, they could build skills capacity by engaging expatriates to train locals or by taking advantage of short courses in the academic institutions to train their workers.

3. To reduce the high tendency of workers who quit working for the firms, the garment firms should pay extra attention to job satisfaction among the workers in the light of workers' general dissatisfaction with salaries, promotion, and career advancements. This could be done by constantly and consciously addressing workers' concerns about how much they are paid and when they are paid, including offering opportunities for them to feel they have a long term benefit if they stayed at the workplace.
4. To improve the general skills performance in the garment sector, it is recommended that associations in the garment sector including AGI or relevant state institutions such as COTVET and others should establish sector support units or skills support units as practicalized in the UK, Australia and South Africa (SETA). Such skills support units collect data, analyse and publish information about skills needs, expectations and projections about skills so that specific or general policies are initiated by policy makers to address skills related issues.
5. The study found that garment firms in Ghana fell short in important competitive strategic areas like niche focus, low-cost production and use of technology, which drive competitive advantage in the garment industry. This is one of the challenges in the garment industry for which a sector support unit, if it existed, could help the garment firms to address. The ability of any firm or country to engage in

manufacturing based on factors of competitive advantage requires strategic long-term plans involving data analysis, market analysis and financial investment. Since the garment firms may not be able to do so on their own, it is recommended that they hire marketing consultants or seek the services of business advisory units to help them draft such long-term competitive strategies. Given the extreme competitive environment of global garment manufacture, it is important that garment firms pursue competitive strategies towards competitive advantage.

5.5 Contributions to knowledge and practice

Knowledge

This research has contributed to the advancement of knowledge in a number of ways. First, the study has contributed to knowledge by providing empirical evidence on skills based challenges facing the garment industry of Ghana. Hitherto, only anecdotal pronouncements and limited publications existed about skills issues of the garment industry of Ghana. This thesis revealed for the first time the extent of skills challenges and the effect of those challenges on the skills-led competitiveness of the Ghanaian garment industry.

Secondly, the study broke new grounds by applying a theory in Vocational Interest in the study of an issue in clothing and textiles. Through a multi-disciplinary approach, the use of Holland's Theory of Vocational Interest provided an important avenue for understanding workers' job satisfaction in the garment industry of Ghana. No other research, to the best of my knowledge, has applied the theory in the study of skills-based competence and competitiveness in the garment industry in Ghana.

Thirdly, the study also contributed to knowledge by adopting a strategic management approach to determine the competitive position of the garment industry in Ghana. Through the use of the Resource Based View Theory (RBV theory), this study stands out as the only research to have empirically investigated the competitive advantage of skills competence of Ghanaian firms. The results demonstrate the efficacy and applicability of using the Theory in understanding skills-based competitiveness not only in Ghana but also in clothing and textiles discipline.

Another contribution of this study to knowledge is the fact that the findings of this study will serve as an empirical data or literature on:

- Skills gaps and shortages
- Profile of skills requirements in the garment industry
- Firm competitiveness of the garment industry of Ghana
- Skills-led competitiveness of the garment industry of Ghana

Finally, the study contributed to knowledge through the conceptual framework. This is because, the conceptual framework (developed based on review of literature) identified direct and indirect factors that determine skills competence and competitiveness. The revised framework that showed the relationship between skills competence and skills competitiveness at the global and firm level, could become the conceptual basis on which firms could increase skills capacity with the hope that it would most likely increase competitiveness at the global and firm level.

Practice

In addition to knowledge, the study also has made practical contributions. First, the findings of the study are relevant to Ghana's Industrial Policy. Specifically, the recommendation of gathering skills data will inform policy makers about skills gaps, shortages, needs and projected skills demands in all industries. This way policy makers could develop a targeted approach to increase skills capacity for all industries including the garment industry.

The findings of the study also had practical application for educational and training institutions. This is because it identified skills areas used in the industry but which were overlooked in the classroom, such as computer applications, machine repairs, among others. These skills areas have been shown in this research to be important now and also for the future. Hence, the academic and training institutions have a continuous opportunity to train in these skills areas.

Another practical application of the study to the garment firms currently operating in Ghana is that this research has identified, through the conceptual model, how the garment firms can increase skills competence and skills competitiveness

Similarly, the findings of the study have brought to light reasons why many workers may not find working in the garment firms desirable and sometimes quit work in the garment industry. This information is not only useful for policy makers but the garment operators as well. Even though the garment firms may have had their own anecdotal explanations on why workers quit, this study has provided empirical evidence to support what is known and experienced by the garment firms.

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Appendix A: Questionnaire for Members of AGI

UNIVERSITY OF GHANA

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

Section A- BACKGROUND INFORMATION

Title of Study:	Analysis of Skill Gaps and Shortages on the Competitive Position of the Garment Manufacturing Firms of Ghana.
Principal Investigator:	William Kwesi Senayah
Respondents:	Questionnaire for Members of the Association of Ghana Industries: CEOs, HR Managers or Supervisors

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

Dear Sir/ Madam,

You are being asked to take part in a research study. In this consent form you will find specific details about the research in which you are being asked to participate. First, the objective of this research is to analyse skills supply and demand regarding the garment industry in Ghana to determine the extent to which skills gaps and shortages affect the competitiveness of the garment production industry, given the importance of the garment sector to the national economy.

If you agree to participate in this study, you will be asked to complete a self-administered questionnaire, which will take about 20 minutes. Specifically, questions will focus on your experiences in recruiting skilled personnel, assessing skills proficiency, addressing skills shortages and your perceptions of competition in the industry.

Benefits/Risk of the study

There are no risks to you or your privacy if you complete the survey. Your answers will be completely anonymous. There are no identifying marks/links to you on the

questionnaire. Do not identify yourself in any place in the survey. Results will be reported in aggregate form.

Confidentiality

The information in the study records will be kept strictly confidential. Data will be stored securely, as will measures taken to protect the security of data. No reference will be made in oral or written reports which could link you to the study. You will NOT be asked to record your name on any study materials so that no one can match your identity to the answers that you provide.

Compensation

- There is no compensation for completing this survey. You efforts and time to help in this research is, however, thoroughly appreciated.

Withdrawal from Study

Your participation is voluntary and participants may withdraw at any time without any penalty. More specifically, you will not be adversely affected if you decline to participate or later stop participating.

Contact for Additional Information

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, William Kwesi Senayah, at wksenayah@uew.edu.gh, or (054-283-3858).

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in this research have been violated during the course of this project, you may contact:

Administrator, Ethics Committee for Basic and Applied Sciences
College of Basic and Applied Sciences
University of Ghana

P. O. Box LG 68
Legon – Accra
Tel: **+233244692728**
Email: saddo@staff.ug.edy.gh / saddo@ug.edu.gh

Do you agree to take part in this study?

Yes □

No □

QUESTIONNAIRE ON ASSESSMENT OF SKILLS COMPETENCE AND COMPETITIVENESS

1.0 Assessment of Skills Gaps

The following questions determine the extent to which your firm possess or lack the necessary skills proficiency that is need to perform to the optimum manufacturing standards.

1.1 Assessment of Skill Gaps

Instructions: Please tick [√] Yes or No to indicate on the left column, whether the skills based activity is available to you now. In the next column, please indicate your perception of the current and future importance of each skill based activity on a scale of (1: Not important), (2: Quiet important) and (3: Important)

				Importance					
		Availability		**Currently**			**Future**		
S/N	**Skill based activity**	**Yes**	**No**	**1**	**2**	**3**	**1**	**2**	**3**
1.	Fashion Design skills								
2.	Pattern Making skills								
3.	Pattern & fabric cutters skills								
4.	Quality assurance skills								
5.	Production management skills								
6.	Machinist/sewing skills								
7.	Merchandizing skills								
8.	Computer Aided Applications								
9.	Fit Model / Sample Making skills								

10	Ironing/ Pressing skills								
11	Finishing skills								
12	Repairing of machine skills								
13	Technical Skills								
14	Basic Computer literacy skills								
15	Advanced IT skills								
16	Multi-tasking Skills								
17	Communication Skills								
18	Customer handling skills								
19	Team working skills								
20	Foreign language skills								
21	Problem solving skills								
22	Management skills								
23	Numeracy skills								
24	Literacy skills								
25	Sales and marketing skills								
26	Personal attributes skills								
27	Time management skills								
28	Experience-related skills								

1.2 Skills Competence assessments

The following question assesses the extent of skills proficiency in your firm. Please rate the degree to which your firm possess these proficiencies as:

- Needs Improvement = 1
- Satisfactory = 2
- Average = 3
- Above Average = 4
- Outstanding/excellent = 5

S/N	Skills Proficiency	1	2	3	4	5
29.	Ability to conceptualize and develop design using knowledge of fashion designing					
30.	Ability to do grading, sizing, drafting or draping of fabrics using free-hand or software to produce patterns					
31.	Ability to cut out fabric and patterns as well as selection of correct speed and blade for cutting each type of fabric					
32.	Application of quality characteristics expected of products as stated in laws or expected by a contractors					
33.	Ability to plan and schedule production, manage day-to-day activities of production processes or systems and control wastage.					
34.	Operate multifunctional machines, produce a specified number of stitches per minute, assemble a garment within a specific schedule					
35.	Source fabrics, working with fashion trends, prepare quotation, design specification and briefs, engage in fashion buying					

36.	Produce original concepts, digital prototypes and illustrate those concepts using CAD/CAM software					
37.	Ability to analyse, synthesize and evaluate products based on sample making or fit modelling					
38.	Pressing of garments during and after construction, fusing of interfacing and interlinings to sections of garment and preparation of small parts					
39.	Work on different fabric finishes, making sure finished garments meet quality standards and attach labels for size, care and identification.					
40.	Repair machines of different types and uses. Acquire spare parts to fix such problems					
41. 5	Ability to perform all skills requirement needed to compete globally in apparel production					

2.0 Presence of Skills Shortage

The following question assesses the presence of skills shortage. Beside each statement, please indicate the presence of this characteristic in your firm based on:

- Strongly Disagree : **SD**
- Disagree : **D**
- Agree : **A**
- Strongly Agree : **SA**

S/N	**Presence**	**SD**	**D**	**A**	**SA**
42	It is difficult to recruit qualified people from the industry				

43	Part of our production is outsourced to other firms because of lack of qualified people at our firm				
44	The firm sources people internally and promote them to perform other functions				
45	It is difficult to implement division of labour for various tasks				
46	Most applicants lack work experiences				
47	Our firm has skills shortages in some key areas of production				
48	We do not have any individual that can train others in areas that we lack skills				

2.1 Skills Shortages based on occupational categories

Instruction: please tick [√] to indicate whether or not you have "hard-to fill" vacancies or find it difficult to find people with the right skills in the following occupational categories.

S/N	Occupational skills categories	Yes	No
49	Fashion Designers		
50	Pattern Makers		
51	Pattern & fabric cutters		
52	Quality assurance officers		
53	Production managers		
54	Production Line / machinists		
55	Merchandizing officer		
56	CAD/CAM technicians		
57	Fit Model / Sample Makers		
58	Machine repairers		
59	Pressing and finishing officers		

	Others		

2.2 Assessment of Recruitment Challenges

The following questions ask about recruitment challenges and steps to overcome them. Instruction: please tick [√] to indicate your response on which of the following possible factors explain your recruitment challenges.

		Response	
S/N	**Recruitment challenges**	**Yes**	**No**
60	Not enough Interest of workers		
61	Low Pay of workers		
62	Low number of skilled applicants		
63	Low number of motivated applicants		
64	Low number of applicants generally		
65	Lack of work experience		
66	Lack of qualifications		
67	Others (please specify)		

2.3 Strategies in addressing recruitment shortages

Instruction: please tick to indicate your response on which of the following strategies you use to address recruitment shortages

		Response	
S/N	**Strategies to address recruitment shortages**	**Yes**	**No**
68	Recruit qualified people from the industry		
69	Recruit semi-qualified people		
70	Recruit new unqualified (mainly unemployed) people from outside		
71	Source people internally and promote them		
72	Recruit people from outside the industry with generic skills		
73	Recruit graduates from formal and informal institutions		
74	Outsource that part of shortage to another firm		
75	Others (please specify)		

Assessment of Skill Level Competitiveness

The following question assesses your perceptions about skills level competitiveness in relation to Ghanaian and Global Competitors with the following skills based activities.

Instruction: Based on the skills available in your firm please tick [√] to indicate whether you perceive your competitiveness as:

- Above Average : **AA**
- Average **: A**
- Below Average : **BA**

		Ghanaian Comparison			Global Comparison		
S/N	**Skill based activity**	**BA**	**A**	**AA**	**BA**	**A**	**AA**
42.	Fashion Design skills						
43.	Pattern Making skills						
44.	Pattern & fabric cutters skills						
45.	Quality assurance skills						
46.	Production management skills						
47.	Machinist/sewing skills						
48.	Merchandizing skills						
49.	Computer Aided Applications						
50.	Fit Model / Sample Making skills						
51.	Ironing/ Pressing skills						
52.	Finishing skills						
53.	Repairing of machine skills						

3.1 Overall Perceived Competitive Advantage

Instruction: Please rate the degree to which your company performs better than its competitors on the basis of the following factors:

- Needs Improvement = 1
- Satisfactory = 2
- Average = 3
- Above Average = 4

- Outstanding/excellent = 5

S/N	**Source of competition**	**1**	**2**	**3**	**4**	**5**
76	Analysis and use of technology					
77	Business planning skills					
78	Loan and interest rate management					
79	Low cost of production					
80	Machine management					
81	Niche Focus					
82	Marketing skills					
83	Brand Loyalty					
84	Production skills					
	Others					

3.2 Assessment of Sources of Competitive Advantage

The following questions determine your perceptions about how the following skills based resources provide a competitive advantage to your firm.

Instruction: tick yes or no if you think the activities provide skills resources that are Valuable, Rare, Costly to imitate and if your organization exploits those skills.

S/N	**Skills resource**	**Valuable**		**Rare**		**Costly to Imitate**		**Exploited by Organization**	
		Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
85	Fashion Designing								
86	Pattern Making								

87	Pattern & fabric cutting								
88	Quality assurance								
89	Production management								
90	Production/ machining								
91	Merchandizing								
92	CAD/CAM application								
93	Fit Model / Sample Making								
94	Repairs								
95	Pressing and finishing								

4.0 Profile of firms

The following questions assess basic profile of your company. Please tick or write where it is required

97. Type of manufacturing: Full scale/Full Package □ Cut, Make, Trim (CMT) □

98. Number of employees: Less than 10 □, Between 11 to 30 □, From 30 and above □

99. Are all products locally manufactured? Yes □ No □

100. Percentage of your products for local market:
Less than 50% □
About 50% □
Above 50% □

101. Percentage of product for international Market
Less than 50% □
About 50% □
Above 50% All □

102. Is your company/firm a registered company? Yes or No

103. Gender: Male □ Female □

Type of apparel(s) produced (tick those that apply)

S/N	Types of Apparel Produced	Response
	Women's Wear	
105	Outwear	
106	Dresses	
107	Sportswear and Separates	
108	After five and Evening Clothes	
109	Brides and Bridesmaid Attire	
110	Blouse	
111	Uniform and Aprons	
112	Maternity	
	Children's Wear	
113	Infants	
114	Toddlers	
115	Children	
116	Girls	
117	Preteen	
118	Boys	
	Men's Wear	
119	Tailored Clothing	

120	Furnishing (shirts, neckwear, sweaters, knit tops, underwear, socks, robes and pyjamas	
121	Heavy outwear	
122	Work clothes	
123	Active sportswear	

Appendix B: Questionnaire for Workers in the Garment Firms

UNIVERSITY OF GHANA

DEPARTMENT OF FAMILY AND CONSUMER SCIENCES

Section A- BACKGROUND INFORMATION

Title of Study: Analysis of Skill Gaps and Shortages on the Competitive Position of the Garment Manufacturing Firms of Ghana.

Principal Investigator: William Kwesi Senayah

Respondents: Questionnaire for workers of the Garment Manufacturing Firms

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

Dear Sir/ Madam,

You are being asked to take part in a research study. In this consent form you will find specific details about the research in which you are being asked to participate. First, the objective of this research is to analyse skills supply and demand regarding the garment industry in Ghana to determine the extent to which skills gaps and shortages affect the competitiveness of the Ghana garment production industry given the importance of the garment sector to the national economy.

If you agree to participate in this study, you will be asked to complete a self-administered questionnaire, which will take about 20 minutes. Specifically, questions will focus on your experiences in recruiting skilled personnel, assessing skills proficiency, addressing skills shortages and your perceptions of competition in the industry.

Benefits/Risk of the study

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will be completely anonymous. There are no identifying marks/links to you on the questionnaire. Do not identify yourself in any place in the survey. Results will be reported in aggregate form.

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Compensation

There is no compensation for completing this survey. You efforts and time to help in this research is, however, thoroughly appreciated.

Withdrawal from Study

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College of Basic and Applied Sciences

University of Ghana

P. O. Box LG 68

Legon – Accra

Tel: **+233244692728**

Email: saddo@staff.ug.edy.gh / saddo@ug.edu.gh

Do you agree to take part in this study?

Yes □

No □

The Following Questions ask about your interest. Read each statement. **If you agree with the statement fill the circle**. There are no wrong answers.

	JOB SATISFACTION SURVEY William K. Senayah Department of Family & Consumer Sciences University of Ghana, Legon. Copyright Paul E. Spector 1994, All rights reserved.							
	PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
1	I feel I am being paid a fair amount for the work I do.		1	2	3	4	5	6
2	There is really too little chance for promotion on my job.		1	2	3	4	5	6
3	My supervisor is quite competent in doing his/her job.		1	2	3	4	5	6
4	I am not satisfied with the benefits I receive.		1	2	3	4	5	6
5	When I do a good job, I receive the recognition for it that I should receive.		1	2	3	4	5	6
6	Many of our rules and procedures make doing a good job difficult.		1	2	3	4	5	6
7	I like the people I work with.		1	2	3	4	5	6
8	I sometimes feel my job is meaningless.		1	2	3	4	5	6
9	Communications seem good within this organization.		1	2	3	4	5	6
10	Raises are too few and far between.		1	2	3	4	5	6
11	Those who do well on the job stand a fair chance of being promoted.		1	2	3	4	5	6
12	My supervisor is unfair to me.		1	2	3	4	5	6
13	The benefits we receive are as good as most other organizations offer.		1	2	3	4	5	6
14	I do not feel that the work I do is appreciated.		1	2	3	4	5	6
15	My efforts to do a good job are seldom blocked by red tape.		1	2	3	4	5	6
16	I find I have to work harder at my job because of the incompetence of people I work with.		1	2	3	4	5	6

JOB SATISFACTION SURVEY

William K. Senayah
Department of Family & Consumer Sciences
University of Ghana, Legon.

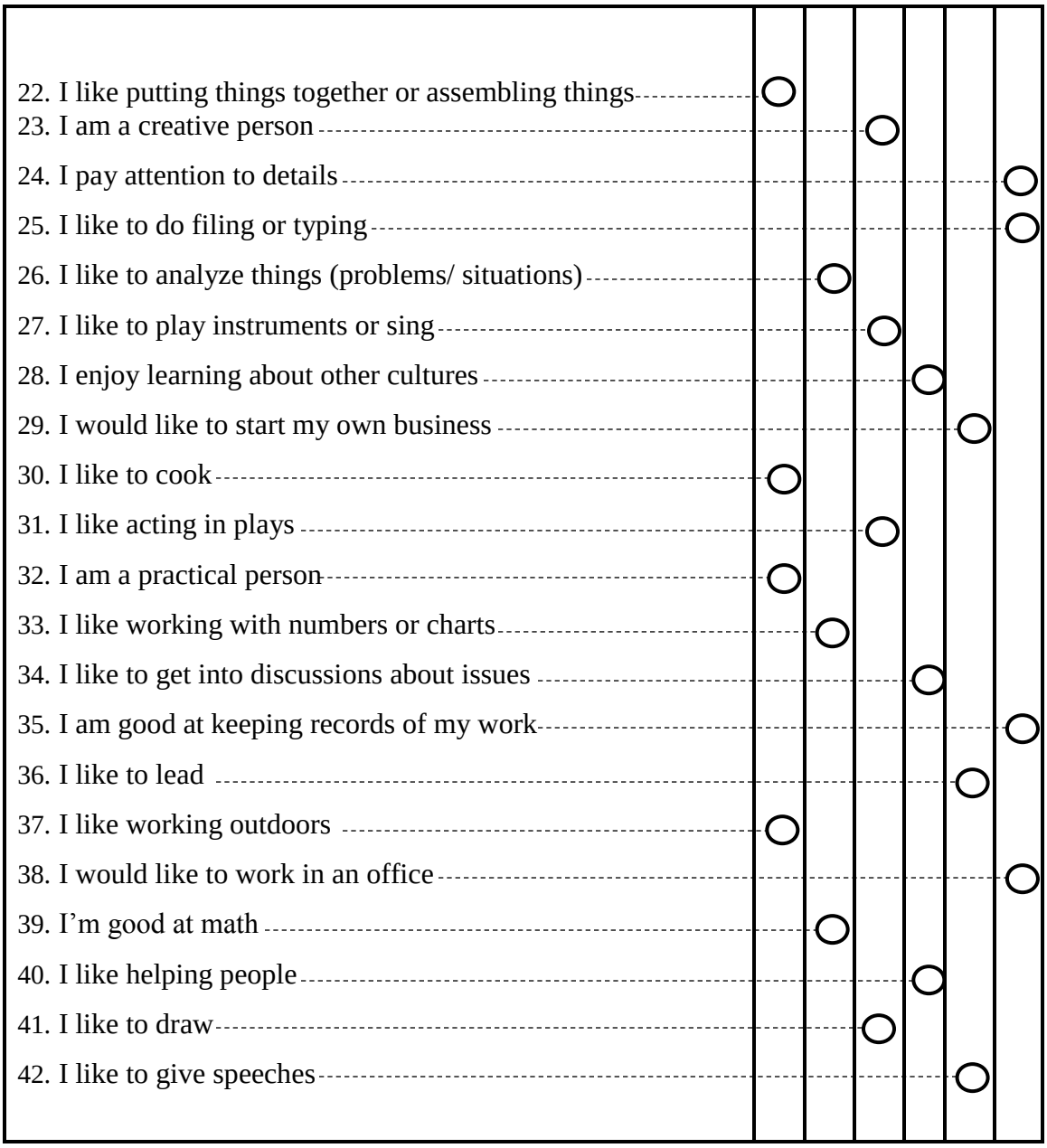
	PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
17	I like doing the things I do at work.		1	2	3	4	5	6
18	The goals of this organization are not clear to me.		1	2	3	4	5	6
19	I feel unappreciated by the organization when I think about what they pay me.		1	2	3	4	5	6
20	People get ahead as fast here as they do in other places.		1	2	3	4	5	6
21	My supervisor shows too little interest in the feelings of subordinates.		1	2	3	4	5	6
22	The benefits package we have is equitable.		1	2	3	4	5	6
23	There are few rewards for those who work here.		1	2	3	4	5	6
24	I have too much to do at work.		1	2	3	4	5	6
25	I enjoy my co-workers.		1	2	3	4	5	6
26	I often feel that I do not know what is going on with the organization.		1	2	3	4	5	6
27	I feel a sense of pride in doing my job.		1	2	3	4	5	6
28	I feel satisfied with my chances for salary increases.		1	2	3	4	5	6
29	There are benefits we do not have which we should have.		1	2	3	4	5	6
30	I like my supervisor.		1	2	3	4	5	6
31	I have too much paperwork.		1	2	3	4	5	6
32	I don't feel my efforts are rewarded the way they should be.		1	2	3	4	5	6
33	I am satisfied with my chances for promotion.		1	2	3	4	5	6
34	There is too much bickering and fighting at work.		1	2	3	4	5	6
35	My job is enjoyable.		1	2	3	4	5	6

	JOB SATISFACTION SURVEY William K. Senayah Department of Family & Consumer Sciences University of Ghana, Legon. Copyright Paul E. Spector 1994, All rights reserved.							
	PLEASE CIRCLE THE ONE NUMBER FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.		Disagree very much	Disagree moderately	Disagree slightly	Agree slightly	Agree moderately	Agree very much
36	Work assignments are not fully explained.		1	2	3	4	5	6

The Following Questions ask about your interest. Read each statement. **If you agree with the statement fill the circle**. There are no wrong answers.

1. I like to work on cars	○					
2. I like to do puzzles		○				
3. I am good at working independently			○			
4. I like to work in teams				○		
5. I am an ambitious person, I set goals for myself					○	
6. I like to organize things, (files, desks/offices)						○
7. I like to build things	○					
8. I like to read about art and music			○			
9. I like to have clear instructions to follow						○
10. I like to try to influence or persuade people					○	
11. I like to do experiments	○					
12. I like to teach or train people				○		
13. I like trying to help people solve their problems				○		
14. I like to take care of animals	○					
15. I wouldn't mind working 8 hours per day in an office						○
16. I like selling things					○	
17. I enjoy creative writing			○			
18. I enjoy science		○				
19. I am quick to take on new responsibilities					○	
20. I am interested in healing people				○		
21. I enjoy trying to figure out how things work		○				

The Following Questions ask about your interest. Read each statement. **If you agree with the statement fill the circle**. There are no safe answers.



Demographic information

1. Gender: Male ☐ Female ☐
2. Age……..
3. Education Level: BECE/SSCE☐ Intermediate ☐ Advanced ☐ Diploma ☐ Degree ☐
4. Please tick [√] **only one** of the occupational categories that **best describes your current work**. In the next column, write how many years you have been doing this job

Occupational skills categories	**Current work**	**No. of yrs.**
Fashion Design		
Pattern Making		
Pattern & fabric cutters		
Quality assurance officers		
Production managers (supervisor)		
Production Line / machinists (sewing)		
Merchandizing officer (Sales)		
CAD/CAM technicians		
Fit Model / Sample Makers		
Machine repairers		
Pressing and finishing officers		
Others:		

5. Please tick to indicate which **ONE** of the following occupational category **is the most important career interest to you**. In the next column, indicate if you trained or studied that in school or apprenticeship.

Occupational Categories	**Career Interest**	**Did you train/study it?**	
		Yes	**No**
Fashion Designing			
Pattern Making			
Pattern & fabric cutting			
Quality assurance			
Production management			
Production/ machining			
Merchandizing			
CAD/CAM application			
Fit Model / Sample Making			
Machine repairs			
Pressing and finishing			
Others:			

Appendix C: Interview Guide for Garment firms

UNIVERSITY OF GHANA

COLLEGE OF BASIC AND APPLIED SCIENCES

Ethics Committee for Basic and Applied Sciences (ECBAS)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

Title of Study:	The Effect Of Skill Gaps And Shortages On The Competitive Position Of The Garment Manufacturing Sector Of Ghana.
Principal Investigator:	William Kwesi Senayah
Certified Protocol Number	

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

Dear Sir/ Madam,

I want to thank you for taking time to meet with me today. My name is Mr. William Senayah, a PhD Candidate from the University of Ghana. I would like to talk to you about your experiences with regards to skills availability and proficiency and how it affect your business. Specifically, I will be assessing the extent of skills gaps, shortages and how they affect your competitiveness in Ghana or Abroad.

The interview should take less than an hour. I will be tapping the session because I do not want to miss any of your comments. Although I will be taking notes during the session, I cannot be possibly write fast to get it all down. Because we are on tape please be sure to speak up so that I do not miss your comments.

Benefits/Risk of the study

There are no risks to you or your privacy in this interview. In writing the report, your answers will be completely anonymous. There will be no identifying marks/links to you on the report. Do not identify yourself in any in any section of the interview. Results will be reported in aggregate form.

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Compensation

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Withdrawal from Study

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INTERVIEW GUIDE FOR INSTITUTIONAL LEVEL RESPONDENTS

Skills Gaps (gaps in knowledge / requisite skills)

Preamble: A few years ago, the Wall street Journal (one of the most read business newspapers in the world) did a report on the garment industry of Ghana. According to the report, even though people can sew in Ghana, their competitors in Asia sew faster and better than Ghanaians.

- Do you share the view that skills level or the knowledge level in the Ghanaian garment industry is lower than other competitors?
- Have you encountered any situation that has made you contemplate about skills levels in the Ghanaian industry compare to others?
- How important is high or low skills to your production
- How do you determine if an applicant has high or low skills?
- How does high or low skills affect your production? Are you able to produce more because of it or less or you're unable to produce certain dresses or garments because of it.
- What are some of the examples of skills that you think are very important for garment production

Skills Shortage

Preamble: According to the Ghana Statistical Service, Four out of every five females who train in some labour skill in Ghana opt for dressmaking or tailoring. And yet some garment firms still complain to researchers about shortage of labour due to the fact that people come, learn from the work and want to go and open their own shops

Do you share the idea that there's shortage of labour supply in the garment industry?

Can you tell me any personal experience you firm has had with shortage of people and how that has affected your production?

Which particular group of people are in short supply is it pattern making, sales etc.?

What are some of the steps you take to ensure you don't have skills shortage?

Skills Competence/Competitiveness

Preamble: the US Council on competitiveness and Delloite and Touch Company did a research with over 500 CEOs in the Manufacturing sector and their main finding was that the biggest driver of firm competitiveness is talent.

- Do you share the view that due to difficulties with talent by way of shortage of people or low skills level Ghanaian firms could be having difficulty to compete nationally or globally?
- Do you evaluate your firm to determine competence?
- How do you explain competitiveness of your firm?
- How does skill gaps or gaps in knowledge affect competitiveness?
- How does skills shortage affect your competence?
- Do you think that issues related to skills affect competitiveness or competitive advantage in garment manufacturing? Why?

Closing of Interview

Is there anything more you would like to add?

I will be analyzing the information you and others gave me and submitting a draft report to the Dept. of Family & Consumer Sciences in Two Months. I will be happy to send you a copy to review at that time, if you will be interested.

Thank you for your time.

Appendix D: Interview Guide for Garment Workers

UNIVERSITY OF GHANA

COLLEGE OF BASIC AND APPLIED SCIENCES

Ethics Committee for Basic and Applied Sciences (ECBAS)

PROTOCOL CONSENT FORM

Section A- BACKGROUND INFORMATION

Title of Study: The Effect Of Skill Gaps And Shortages On The Competitive Position Of The Garment Manufacturing Firms Of Ghana.

Principal Investigator: William Kwesi Senayah

Section B– CONSENT TO PARTICIPATE IN RESEARCH

General Information about Research

Dear Sir/ Madam,

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- There is no compensation for completing this interview. Your efforts and time to help in this research is, however, thoroughly appreciated.

Withdrawal from Study

Your participation is voluntary and participants may withdraw at any time without any penalty. More specifically, you will not be adversely affected if you decline to participate or later stops participating.

Contact for Additional Information

What if you have questions about this study?

If you have questions at any time about the study or the procedures, you may contact the researcher, William Kwesi Senayah, at wksenayah@uew.edu.gh, or (054-283-3858).

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in this research have been violated during the course of this project, you may contact:

Administrator, Ethics Committee for Basic and Applied Sciences
College of Basic and Applied Sciences
University of Ghana
P. O. Box LG 68
Legon – Accra
Tel: +233244692728
Email: saddo@staff.ug.edy.gh / saddo@ug.edu.gh

INTERVIEW GUIDE FOR WORKERS

1. Skills Acquisition History

- In the past 6 -12 months, have you participated in any on the job training courses, such as work-related training or private skills training, that lasted at least 5 days/30 hours
- Is there an opportunity for you to receive further training for the work you do?
- Do you think your current skills levels are adequate for the job you do?

2. Job Satisfaction

- Overall, are you satisfied with your job? Is it because of your socio-cultural background?
- What aspects of your job are you satisfied with? Why?
- What aspect of your job are you not satisfied? Why?
- What aspect of the job do you find most difficult
- Have you ever felt like quitting to open your own shop or for other reasons?
- Do people frequently leave the job? If yes, what reasons do they give?
- Do you think that as you continue to work here, you're generally satisfied with your life?
- At the time we were collecting the data, some companies were laying off worker. Did these events affect your feelings about your job?

3. Career Aspiration

- What is your career aspiration?
- Where do you see yourself in the next 5/10 years?
- Why did you pursue this career?
- Do you have aspiration to pursue another career? Is that why you're satisfied or not satisfied with this job?
- Do you think that with your current qualification, you could qualify for another job?

Closing of Interview

Is there anything more you would like to add?

I will be analyzing the information you and others gave me and submitting a draft report to the Dept. of Family & Consumer Sciences in Two Months. I will be happy to send you a copy to review at that time, if you will be interested.

Thank you for your time.

Appendix E: Analysis of First Three RIASEC Codes

Analysis of Career – Interest Congruence using first three of RIASEC codes

In analysing congruence, Holland (1997) notes that congruence can be determined based on the first three choices of the RIASEC code, however, further analyses to determine whether the congruence or incongruence could differ among the first three RIASEC codes did not show any different results (see Table 5.1)

Table 5.1: Career-Interest Congruence based on first three codes

		Career-Interest Congruence based on first choice code		Total
		No congruence	Congruence based first choice code	
Career-Interest Congruence based on all 3 codes	No Congruence	102	0	102
	Congruence	37	42	79
Total		139	42	181

χ^2 (1) = 70.61, $p < 0.01$

There was a significant association between congruence based on first choice code and general congruence [χ^2 (1) = 70.61, $p < 0.01$], such that those with congruence on first choice code tended to have general congruence based on all the three choices. There was high agreement among the first three choices within the sample. This implies the use of congruence based on all three codes or first choice code would not matter or change the outcome of results stated.

Appendix F: Analysis of Skills-based Competence in Ghana and Global Levels

Skills areas (Ghana)	Below Average	Average	Above Average
Fashion Design Skills	1(3.2%)	18 (58.1%)	12 (38.7%)
Pattern Making skills	-	15 (48.4)	16 (51.6)
Pattern & fabric cutting skills	1(3.2)	16 (51.6)	14 (45.2)
Quality assurance skills	2 (6.5)	14 (45.2)	15 (48.4)
Production management skills	2 (6.7)	17 (56.7)	11(36.7)
Production Line / machinists Skills	2 (6.5)	14 (45.2)	15 (48.4)
Merchandizing Skills	4 (12.5)	20 (62.5)	8 (25.0)
Computer Aided Application skills	4 (13.3)	21(70.0)	5 (16.7)
Fit Model / Sample Making skills	4 (12.5)	22 (68.8)	6 (18.8)
Machine repair skills	4 ((12.5)	21(65.6)	7 (21.9)
Finishing skills	2 (6.3)	14 (43.8)	16 (50.0)
Ironing/Pressing skills	1 (3.2)	14 (45.2)	16 (51.6)
Skills areas (Global)	**Below Average**	**Average**	**Above average**
Fashion Design Skills	3 (12.5%)	13 (54.2%)	8 (33.3%)
Pattern Making skills	5 (20.8)	11(45.8)	8 (33.3)
Pattern & fabric cutting skills	2 (8.3)	13 (54.2)	9 (37.5)
Quality assurance skills	3 (12.5)	13 (54.2)	8 (23.5)
Production management skills	2 (8.7)	16 (69.6)	5 (21.7)
Production Line / machinists Skills	2 (8.3)	12 (50.0)	10 (41.7)
Merchandizing Skills	6 (27.3)	9 (40.9)	7 (31.8)
Computer Aided Application skills	11(45.8)	8 (33.3)	5 (20.8)
Fit Model / Sample Making skills	5 (21.7)	12 (52.2)	6 (26.1)
Machine repair skills	4 (18.2)	11 (50.0)	7 (31.8)
Finishing skills	3 (13.0)	10 (43.5)	10 (43.5)
Ironing/Pressing skills	3 (13.6)	10 (45.5)	9 (40.9)

Appendix G: Ethical Clearance Document

UNIVERSITY OF GHANA

ETHICS COMMITTEE FOR BASIC AND APPLIED SCIENCES (ECBAS)

P. O. Box LG 1195, Legon, Accra, Ghana

Ref. No: ECBAS 010/16-17

5th September, 2017

Mr. William Kwesi Senayah
Dept. of Family and Consumer Science
University of Ghana
P.O. Box LG 91,

Legon, Accra

Dear Mr. William Kwesi Senayah,

ECBAS 010/16-17: THE EFFECTS OF SKILL GAPS AND SHORTAGES ON THE COMPETITIVE POSITION OF THE GARMENT MANUFACTURING SECTOR OF
GHANA

This is to inform you that the above reference study has been presented to the Ethics Committee for Basic and Applied Sciences for a full board review and the following actions taken subject to the conditions and explanation provided below:

Expiry Date:	4/09/18
On Agenda for:	Initial Submission
Date of Submission:	09/09/2016
ECBAS Action:	Approved
Reporting:	Annual

Please accept my congratulations.

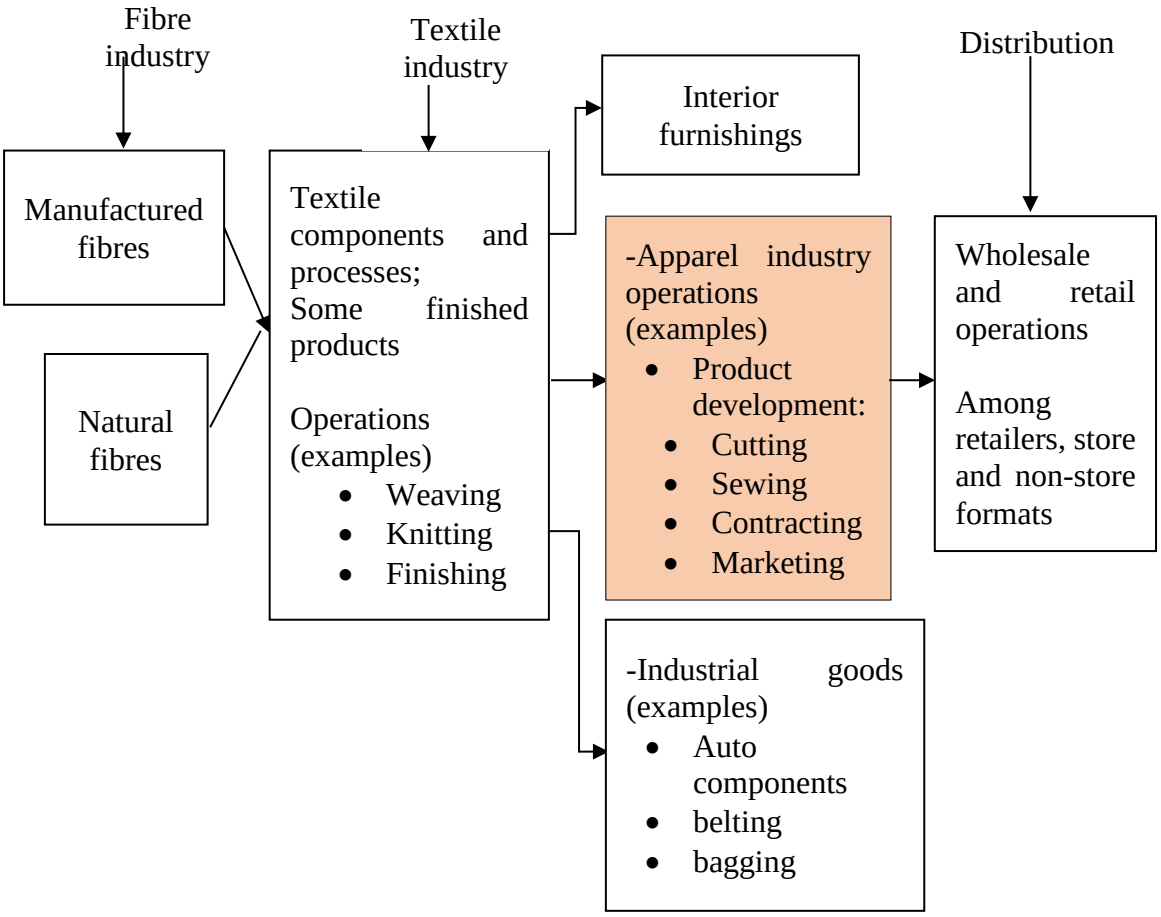
Yours sincerely,

Professor Daniel Bruce Sarpong
ECBAS Chairperson

ETHICS COMMITTEE FOR BASIC AND APPLIED SCIENCES APPROVED 08 SEP 2017 UNIVERSITY OF GHANA

Tel: +233-277493259 Email: ekacquaah@ug.edu.gh / ethicscbasûžug.edu.gh

Appendix H: Textile Complex



Source: Dickerson (1999).

Appendix I Top Exporting Countries for all categories of Apparel in 2014

Country or area	Value (million) US$	Average Growth (%) 10 – 14	Growth (%) 13 – 14	World Share %	Cum
World	33, 537.7	7.9	4.2	100	
China	13, 176.1	10.8	6.3	39.3	39.3
Malaysia	3, 368.6	4.3	-2.1	10.0	49.3
Italy	2,377.1	9.8	5.9	7.1	56.4
Germany	1,346.5	7.0	4.5	4.0	60.4
Thailand	1,235.9	3.8	3.6	3.7	64.1
China, Hong Kong SAR	1,122.9	-0.9	-6.8	3.3	67.5
France	1, 118.1	9.6	7.3	3.3	70.8
India	1, 112.1	15.5	-2.5	3.3	74.1
USA	804.6	3.4	1.6	2.4	76.5
Netherlands	676.0	15.2	9.5	2.0	78.5
Pakistan	603.8	5.6	2.6	1.8	80.3
Belgium	557.8	0.0	-5.9	1.7	82.0
United Kingdom	551.9	11.2	15.1	1.6	83.6
Vietnam	475.1	15.1	17.9	1.4	85.1
Spain	470.0	13.1	20.9	1.4	86.5

Appendix J Breakdown of Equipment used in the Garment Industry

Category of Equipment	Equipment/Machine	Quantity (Pieces)	Category of Equipment	Equipment/Machine	Quantity (Pieces)
Stitching	Sewing machine (hand)	132	Cutting	Cutting machine	10
	Sewing machine (electric)	46		Electric Scissors	2
	Straight stitch	94		Guillotine	1
	Straight stitch (Industrial)	86	Sub-total	-	13
	Overlocking machine	41	Forming/ Pressing/	Steam presses	2
	Zigzag machine	41	Ironing	Pressing iron	22
	Embroidery machine	36		Industrial iron	5
	Buttonhole machine	15		Button making machine	1
	Blind stitch machine	1		Buckle making machine	2
	Flat lock machine	5		Designing machine	6
	Zigzag machine (Industrial)	1		Dress stand	3
				Fusing machine	1
	Buttonhole machine (Industrial)	1		Glue gun	1
				Press studs machine	2
	Knitting machine	3		Others	3
Sub-total	-	502	Sub-total	-	48
			Total	-	563

Source: JICA (2008)