UNIVERSITY OF EDUCATION, WINNEBA

COLLEGE OF TECHNOLOGY EDUCATION, KUMASI

# QUALITY CONTROL MANAGEMENT PRACTICES OF LARGE SCALE GARMENT PRODUCING COMPANIES IN THE ACCRA METROPOLIS

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A Dissertation in the Department of FASHION DESIGN AND TEXTILES EDUCATION, Faculty of VOCATIONAL EDUCATION, submitted to the School of Graduate Studies, University of Education, Winneba, in partial fulfillment of the requirements for the award of Master of Technology (Fashion Design and Textiles Education) Degree

OCTOBER, 2018

# DECLARATION

## STUDENTS DECLARATION

I, EVELYN EMEFA ALLOTEY, declare that this dissertation, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE: ……..

DATE: ……

## SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Dissertation as laid down by the University of Education, Winneba.

NAME OF SUPERVISOR: MR. WILLIAM SENAYAH

SIGNATURE: …….

DATE: ……..

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# DEDICATION

To my daughters Jessica and Jacqueline

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## ABSTRACT

The world is now a global market, and every business is striving to compete favourably among all businesses within their sector or enterprise. The garment producing companies are also experiencing pressure from this competitive market as well as increasing requirements of customers of quality of their products to exceed their expectations. This has led to the garment producing companies to consider the improvement of their internal quality, strengthen management commitment levels as well as pay closer attention to quality control management practices. The main aim of the study was to assess the quality control management practices of large scale garment producing companies within the Accra Metropolis. The data collection was through two sets of questionnaires presented to customers of these companies as well as to senior management employees of these large scale garment producing companies in the Accra Metropolis. The data collected was analysed using simple percentages as well as Microsoft Excel. From the analysis, it was realized that, quality control practices by the garment producing companies agrees to the concept that quality control is always defined by the customer, and management practices of these garment producing companies are trying their optimum best to create value to their customers. Majority of their customers were also satisfied with the final products of their garments produced. It was recommended that garments produced by these companies should always be designed and constructed to fitness to ensure customer satisfaction. Also these companies should always think of the academic upgrade of their employees to make them more committed in their work to enable them give off their best for effective quality control management practice.

# CHAPTERONE

# INTRODUCTION

## 1.1Background to the Study

The material progress of mankind depends on the technical advances gained through scientific research. The main purposes of research and development are to find improved methods, better materials, new products, more uses for products, and to seek the best kind of organisation to accomplish the objectives of quality control management of large scale garment producing companies in the Accra Metropolis.

From time immemorial fashion has been understood to mean changing forms of clothing. People have adorned themselves in various materials used for clothing starting from the usage of tree barks and leaves in the past and cotton, linen and woollen among others in contemporary times. All these have arisen from people's position in society as well as expectation of admiration from other people. Fashion's attribute is not only consideration of marketing of garments but also the appearance, fitness for purpose and after care. The Ghanaian fashion industry is becoming very vibrant with the introduction of new methods and products in the market every now and then.

However, problems exist in the garment production industry, including large-scale garment companies in terms of quality of the finished garments and many concerns have been raised about numerous defects found on them. Another major problem in Ghana and other developing countries is that, employees are not necessarily encouraged to take responsibility for the quality of work they produced. A company incurs full cost of production even if their products are rejected (Rosen, 2004). Hence, there is a high rate of repair and making of such garments as most of them are custom made. Furthermore, the

cost of man-hours used for the re-making of defective products and cost of materials for defective products are significantly high when collating all garments produced including large scale garment companies (Senaviratna, 2013).

Large scale garment producing companies can only flourish if continuous improvements become the hallmark. To attain this improvement, new ideas ought to be embraced in the day to day management of not only the final product but the processes involved as well. One of the management techniques that can be implemented will be the adoption of the Quality control tool in every aspect of the production process.

Fashion in clothes normally allows the wearer express his or her emotion and solidarity through a selection of available clothes to reflect his or her personality. This expression of personality is not enough; as the most important attribute of fashion is attractiveness. In addition, the knowledge of fabrics, design and construction of clothes are to conform to the individual types. In designing of clothes the golden rule is to know the figure, its curves and general outline. The form must be the background, landscape, canvas and foundation.

Generally, in garments designed for an individual, four different classifications are considered, namely;

i. Choice of material,

ii. Choice of colour,

iii. Design of structure and

iv. Decoration or finishing.

The garment quality is normally observed and classified into three basic features namely;

i. Features determining product functionality;

ii. Features determining product reliability and durability and

iii. Features constituting a self-gratifying addition to the product (Buntak et. al., 2012).

## 1.2 Statement of the Problem

Quality has become a strategic goal and competition priority in the modern fashion industry and certainly a key weapon in battles to overcome new markets. The quality details of a good garment constructed is always necessary; however, this has not been the case as some garments constructed by large scale garment companies in the Accra Metropolis have received rejection from certain costumers and consumers alike. Customers 'satisfaction is seldom met as complaints are consistently made with regard to the quality of the finished garment. Some of these large scale garment companies do not possess the right qualified men for establishing a quality control department to inspect the finished garment before they are released to the customer. The garment productions mostly go through a whole lot of waste right from cutting to finishing resulting in re-makes and rejects sometimes (Islam et. al., 2013).

Some of the faults or defects in designing and production of fabrics have also arisen from malfunction of sewing machines and other equipment holdings of these garment producers in the operation and production process. Errors also arise in the marking out and cutting of garments or a combination of these. Quality related problems in the manufacturing of garment like sewing colour, sizing or garment defects are sometimes overlooked (Rahman, et al.2009).

African garment producing companies are exposed to a small domestic market. They are not able to exploit economies of scale, nor are they exposed to significant competition and their technological gap with the rest of the world is usually wide-yielding (Cook and Jones, 2015).

The large scale garment companies produce varieties of garments, which are normally custom-made, therefore require a number of different procedures in the production process this has resulted in deviations and faults in different places and various frequencies occur. Therefore, in order to achieve production without deviations and faults, it is necessary to introduce methods for evaluating all the factors affecting the quality of the products.

### 1.3 Aim and Objectives of the Study

The main aim of the project is to assess the quality control practices of large scale garments companies in Ghana.

The specific objectives included, to

1. Examine the perception of customers on design and construction defects of garment produced with respect to quality control management practices for large-scale garment producing companies in the Accra Metropolis,
2. Determine the existing practice of these companies as well as mitigating factors that impede their operations,
3. Critically examine the best possible measures in assuring these companies of quality in both operations and products.

## 1.4 Research Questions

The following questions will help the research to come out with a detailed and increasing commitment to effective quality control practices of these large scale garment companies. Some of the questions to be asked will include:

1. What is the perception of customers on design and construction of garments produced with respect to quality control management practice of large-scale garment producing companies in the Accra Metropolis?
2. What is the current mode of operation for these selected companies as well as the mitigating factors that impede their production process?
3. What are the best possible measures in assuring these companies of quality in both operations and products?

## 1.5 Significance of the Study

1. The findings of this study when published may be beneficial to large-scale garment companies by helping them understand consumers' needs, wants and expectations of the garments they produce for them.
2. It would also deliver a useful set of product quality control guidance on garment design requirements as well as construction of garments by considering the processes to be followed for such works.
3. The results of the study would also explain to these companies the impact of quality on business as well as competitiveness among other garment producers in Ghana.

### 1.6 Scope of the Study

The sample population selected for this project was limited to large-scale garment companies in the Accra Central and the Accra Area. The study considered only senior staff in the Quality assurance departments of these companies.

The research began with a pilot study stage investigating a sample of 5 large scale fashion companies' senior quality control officers of their practices in design, construction, inspection and final product. This was set to find out whether those companies have adopted effective quality control practices in their daily operations and products.

The data to be collected was of two types. 30 questionnaires were sent to senior officers of these large scale garment companies, whiles another 30 questionnaires were sent to customers of these companies comprising fashion lecturers and fashion students patronising the products and operating in the garment sector.

### 1.7 Instrument for data collection

Data collections for the research were by a combination of structured questionnaires, unstructured interviews and informal discussions with Quality Control Officers of the selected large scale producing companies in the Accra Metropolis. Structured questionnaires were selected primarily because it is a measuring instrument in survey research. Its use has a close relationship with qualitative analysis, which include low level of involvement of the researcher and it is a valuable method of collecting a wide range of information from the respondents. Also unstructured interviews were also used since no specific set of predetermined questions asked, although the relevant information

needed were obtained from the relevant topics in mind. This also made the interview to flow like an everyday conversation. The data to be gathered wereanalysed using relevant statistical tools.

# CHAPTER TWO

# REVIEW OF RELATED LITERATURE

## 2.0 Introduction

The review of related literature is extensively done in this chapter to identify existing knowledge and gap in various garment producing companies in the Accra Metropolis in Ghana, specifically large scale companies.

This section of the thesis therefore assesses the quality control practices of large scale garments producing companies in Ghana, specifically in the Accra Metropolis and the level of quality consciousness of these garment producers through the review of existing journals, textbooks, articles among others both published and unpublished. The literature review also identified the type of customers for these large- scale companies; the needs of customers and whether they are met or not; identification of the different types of defects found on both the design and finished garments produced by large garment producing companies and other mitigating factors that impede the control of quality practices for all companies in the world at large.

The chapter concludes with a summary of the issues discussed.

## 2.1 The Theory of Quality Control

The word ‘quality’ is a relative term which has evolved over various forms from time past. Many scholars have defined what they perceive to be quality in several ways. Every product possesses a number of properties that jointly describe what the user or consumer thinks of as quality. Quality is important to businesses but is really quite difficult to define.

The American Society of Quality Control defined quality as the totality of features and characteristics of a product or service that bear on its ability to satisfy a given need. Badiru and Ayeni (1993) in Gupta (2007) defined quality as an equilibrium level of functionality possessed by a product or service based on the producers capability and customer's need. Quality is therefore about meeting the need and expectations of customers (Applebaum, 1951; Winch, 2004; Akter, 2013).

Customers always want quality that is appropriate to the price that they are prepared to pay and the level of competition in the market. This has made quality one of the key goals and objectives every organization seeks to achieve, although these are often difficult to achieve due to challenges in such organizations (Marire, et. al., 2014). Such challenges need to be addressed as quality is the conformance to requirement and that requirement must be defined in measurable and clearly stated term (Marire, et. al., 2014). Deming (2000) and (Gupta, 2007) however, looked at quality as; "the satisfaction of customer needs and expectations. This means the product should be "fitness for intended use" (Juran, 2000). The relevance of product quality to most customers, include; good design and functionality; reliability and consistency; durability; value for money and good after sales service (Barrie and Paulson, 1992). Quality affects a company in a diversity of ways, from productivity and profitability to customer satisfaction and public perception (Morgan, 2018).

Hence, quality is meeting or exceeding customer's expectations or at least should be customers perspective or specification-based.

However, quality being subjective needs to be made objective, hence, quality control. Quality control practice involves standards which are set for both processes in the

production line as well as the final product to follow laid down procedures, systems and requirements (Juran, 2000). The Quality control activities begin with the evaluation and monitoring of incoming materials to ascertain whether they meet the required specifications. Its main aim or objective is to ensure that a business achieves the desired standards it sets for itself. However, the attainment of perfection in processes or final product for a business is not possible due to variation in terms of material used, production skills applied, reliability of the finished product etc. (Winch, 2004). The production process is also analysed to determine whether the various activities of the various departments meet the established processes. Finally, finished goods and services are studied to determine if they meet customers' expectations (Loukes, 2002).

Quality control in the garment industry is practiced right from initial stage of sourcing of raw materials to the stage of final finished garments (Rahman et al. 2009; Akter, 2013). The quality control requirements in the garment making should be met in each of the different stages of the production process. Due to these requirements, most of the large scale garment producing companies in Ghana have employed a Quality Officer, whose duty is to ensure that all complete line of the production process are verified by helping the companies to ensure that their internal operations and procedures meet the requirements of internationally recognized quality systems (Akter, 2013). In any business endeavour, customers demand and expect value for money. Large scale Garment producers in Ghana, specifically in the Accra Metropolis must therefore make it a must to produce garments that are of customers' satisfaction without having them to be redone (Islam, et al. 2013). They should be produced right the first time.

Quality control is also defined in terms of a particular framework of cost. This as well as a number of factors on which quality is measured in the garment industry, include; performance, reliability, durability, visual and perceived quality of the garment (Akter, 2013).

The success of a firm is dependent on good quality practices. These practices have to be maintained or improve upon to compete favourably in the global market. Quality control practices are concerned with controlling activities with the aim of meeting the required specifications. There are two alternative approaches to managing quality in ensuring that products and services are fit for their purpose and the garment producing sector (Rahman, et al. 2009). Using these two alternative approaches; the first is based on the philosophical aspects of quality improvement and the other on the tools of quality (Gupta, 2007).

Hence, the best way to deal with quality issues in the garment producing industry is to incorporate the practices of the six quality pack: quality policy, quality objectives, quality assurance, quality control, quality audit and quality program plan within the organization life and culture (Kerzner, 2003).

Quality control has been found to have set of core values such as; customer orientation, leadership or management commitment, workforce involvement, focus on business processes, continuous improvement, measurement focus and ethics (Kerzner, 2003).

Winch (2004) identifies two aspects of quality control, namely; the in-process conformance and the pre-process conformance. The in-process conformance is the inspection of the characteristics of components to be sure they are within the pre-

specified tolerance limits. The pre-process conformance on the other hand deals with the establishment of desired performance levels based on appropriate design parameters.

However, modern control techniques are based on the idea of an error free or zero-defect approach (Gupta, 2007). Hence, focusing on quality control helps keep a company strong in all areas (Morgan, 2018).

### 2.1.1 Elements of quality

Quality has three basic elements (Barrie and Paulson, 1992). These include; quality characteristics; quality of design; and quality conformance. These elements combine to determine the quality of the final product.

Barrie and Paulson (1992) argued that quality characteristics is best explained using the story of the 'Blind men and the Elephant'. They claimed that there are many ways any given product can be evaluated. They suggested that the term "quality characteristic" can also be used for the one or more properties that define the nature of a product for quality control purposes. These include dimension, colour, strength, temperature, etc.

This further elaborate that quality of design allows designers to recognize that no human undertaking produces absolutely perfect results. Jung (2015) confirmed Barrie and Paulson (1992) assertion that design often specify not only the desired standard for the characteristics but also define a product. They both agreed that not only dimension or strength define such a product but also tolerances or ranges for acceptable variations from the standard. It is therefore the designer's responsibility, to specify a quality of design that is most economical and functional for the overall product.

Marire et al. (2014) defined "Quality of conformance" as the degree to which the physical work produced conforms to quality of design specified. As with quality of design, there is a close correlation between standards for conformance and the cost of achieving those standards. Barrie and Paulson (1992) supported this statement by confirming that the quality of conformance is influenced by three main factors. These factors are; the production methods, including the skill of the workers, the capabilities of their tools and equipment, and the quality of their raw materials; the supervision and management control applied to direct workers in accordance with the plans and specifications; and the inspection and quality control procedures that are applied, including the knowledge and skills of the inspectors and the reliability of their methods and tools for measuring the quality characteristics specified by the designers.

The customers' needs are expressed in the design criteria that guide the design and production process that produces the technical specifications for the final product. This in effect sets up the quality of design (Sailanawala, 2012).

### 2.1.2 Economics of quality of conformance

According to Loucks (2002), "Quality control" practices costs money. Barrie and Paulson (1992) came out with two main ingredients to these costs as; the cost of the skilled labour, equipment, materials, methods, and supervision to produce quality output; and the costs of monitoring and verifying the quality of output and of correcting or replacing defective work.

Thus, quality is the key attribute that a customer uses to evaluate product or services. Quality is often driven by market-place, by the competition, and especially by the customer (Barrie and Paulson, 1992).

### 2.1.3 Quality standards

The recognized quality standards are the International Organisation for Standardisation (ISO) 9000 family of standards, the international standard for quality management and quality assurance. ISO 9000 is a set of standards and focuses on documents which establishes the principles for a management system which will improve a company's performance.

The ISO 9000 standard was developed to move away from the original rigid approach of its predecessors, and to achieve a more flexible framework which allows organizations to develop their own policies and procedures.

ISO 9000 implementation brings substantial changes in methods, practices, record keeping, etc.(Gupta, 2007). Present Market trend and customer pressure will force companies to obtain ISO certification for their survival and growth.

Hence, total commitment is required of top management to support the effort with new priorities and adequate resources.

## 2.2 The Industry

An industry is defined by the Business dictionary as; 'the manufacturing or technically productive enterprises in a particular field, country, region or economy viewed collectively, or one of these individually'. A single industry is often named after its

principal product, for example, the garment industry. An industry can either be small-scale, medium scale or large-scale.

Companies, however, are classified as being large-scale or small-scale depending on the size of the company in terms of the number of employees and sometimes the annual turnover (Kocic, 2017). The encyclopedia also confirms this definition by describing 'large-scale industry' as that of factories that combine at least three characteristics: use of machinery, employment of wage labour, and the application of regulatory measures such as the Factory Act or Disputes Act.

Table 2.1 shows the differences between small, medium and large companies.

Table2.1: Differences between small, medium and large companies (The Mid **market Institute 2013)**

| SMALL BUSINESSES | MEDIUM BUSINESSES | LARGE BUSINESSES |
|---|---|---|
| Equity held by founder/ family | Mostly privately held-family/ P-E few with public | Mostly public investor- held equity |
| Owner managed | Owners- professionals in key roles | Professional management |
| Decision-making largely by owner | Decision-making by owner / CEO and some key leaders (single/dual) | Distributed decision-making by organizational hierarchy |
| Short-term (seat-of-the-pants) planning – primarily by owner | Some long-term planning-mostly by owner/ key executives | Extensive long term planning horizon by dedicated teams |
| Informal processes, mostly 'people' get many things done | Some formal processes, 'people' get many things done | Formal structure and processes- mostly people independent |
| Most capital needs met by leveraging personal net worth | Limited sources of capital, some hard to access | Wide range of funding sources |

| SMALL BUSINESSES | MEDIUM BUSINESSES | LARGE BUSINESSES |
|---|---|---|
| Small customer base-generally local markets | Limited customer base-limited to geographical or industry niche | Diverse markets (many global) with diverse customers |
| Limited personnel development opportunities | Personnel development limited to key employees | Multiple career development paths and program |
| Little external input- mostly from friends and network | Little external input- from friends network and 'trusted' professionals | Significant external inputs-from network and consultants; have separate governance structure |

Kushnir (2010) argued that the standard for defining the categorization of a company, as to whether large, medium or small is often flawed. His argument compared China to Western Europe in terms of these classifications. He argued that, comparison based on the average annual revenues of the enterprise or the number of people it employs cannot be used as a yardstick. For example in China, a Micro, Small and Medium Enterprise (MSMEs) can be an enterprise with 1 to 3000 employees; total assets from ¥40 to ¥400 million and business revenues from ¥10 to ¥300 million depending on the industry. Meanwhile, the European Union (EU) considers an MSME an enterprise with up to 250 employees, and turnover of no more than €50 million or total balance sheet of no more than €43 million (Kushnir, 2010).

Kushir (2010) debunked other theories of these classifications by concluding that, in theory, the choice of MSME classification could depend on many factors, such as business culture; the size of the country's population; industry and the level of international economic integration. These issues make it difficult to adopt a universal

definition and raise the question of whether it makes sense to strive for what, in the end, might simply be a Procrustean bed. It makes more sense to measure MSMEs with a single ruler, e.g. annual sales or turnover and/or number of employees, but tailor the size breakdown to particular conditions in the country of operation (Kushnir, 2010).

A study conducted in Ghana by a liberal economic think tank showed that of all registered companies in the country, 92% of these companies fall in the small and medium-scale categories (Bastiat Ghana, 2014). The distinction of the differences between the small, medium and large-scale industry showed in classical terms indicate that all the Ghanaian garment companies fall within the small and medium-scale industry category and therefore can be termed as mainly (SMEs). However taking inspiration from Kushnir (2010), one can conveniently place other companies above others. Hence, those employing more than 200 employees in Ghana's garment producing companies and having a large base of customers can thus, be referred to as large scale.

Maririe et al. (2014) identified that quality control of these companies is necessary as it is a functional management discipline which is responsible for defining quality purpose. They further pointed out that prerequisite for effective quality control are freedom from deficiency and minimization or reduction of the following; costs, waste, re-work replacement and inspection costs. As a result of these problems of quality control especially in the garment industry in Ghana, this study takes a cursory look at the problems of quality control in the garment producing large-scale companies in Accra.

## 2.3 The Ghanaian Garment Company

The primary business function of the Ghanaian large scale Garment producing companies is the manufacture of clothing and garment for domestic and export markets. These garment producing businesses design, create, manufacture and sell clothing on contract, for the mass market. They also produce clothing for both local and foreign fashion retailers as well as customized clothing for individual customers.

Some of these clothing and garment producing large companies seek to bring Ghanaian-made clothing to bigger markets throughout Africa and the United States. The customers of these producers are mostly home- based.

A cursory look at the Ghanaian fashion industry today presents it as an industry where there are more women than men. Recent studies of the industry indicate that this gender difference in terms of performance is almost the same than it was in the 1990s. The argument of modern life styles of both genders is not different than it used to be (Kimmel, 2000).

## 2.4 Types of customers for large-scale companies in Ghana

The term customer and consumer are not synonymous (Applebaum, 1951). A purchaser of a product is a customer, whilst the user of a product is the consumer. The buying behavior of the customer is influenced by the needs and preferences of the consumers for whom the products are purchased (Applebaum, 1951).

The composition of customers includes many characteristics, such as gender, age, group, colour, economic and educational status, occupation, religion, nationality origin, and so on. Both consumption and buying behavior are affected by these characteristics.

It is vital for companies to accept that the customer defines quality and that he or she is always right; customer always comes first; the customer is king; and quality begins and ends with the customer.

There are two main types of customers; namely; external customers and internal customers. The external customers are outside the organization or company and normally pay the bills. From such customers are the End-users and manufacturer for suppliers. The internal customers are also those within the organization or company who receive the company's work. In many situations, producers' have multiple customers and therefore, find it useful to identify core customers (Sailanawala, 2012). In order to ensure the complete involvement of the whole organisation in quality issues, the concept of internal and external customer relations should not be taken for granted (Porter, 2011).

According to Porter (2011), a customer defines quality and their needs must be met. Some customers may not be experts in the technicalities of the products, but they do know what they expect the product to do for them.

Garment or clothing companies pay particular attention to their customers buying or sewing habits. This is because customers' dynamics or characteristics factor into consumer behavior and this affects certain companies more than others.

Customers are more likely to spend money if a company caters to their particular lifestyles. They believe clothing fill a particular need and are likely to buy to satisfy that need. It is prudent for garment and clothing companies to understand the needs of their target customers. A customer's personality is the primary dynamic that affects all clothing companies. These companies' products have a short-life span, so producing to the quality of the customer is highly essential.

Quality of a garment is simply defined as customer satisfaction. The perceived quality of a garment is the result of a number of aspects, which together help achieve a desired level of satisfaction for the customer (Islam et. al. 2013).

Also, some of these large-scale garment producing companies have customers in the United States and are able to meet the target market under the African Growth and Opportunity Act (AGOA) initiative. Under this initiative, high quality clothing and garments production are required. This initiative calls for effective quality control system, processes and procedures through production processes to the final product. There is the need to therefore check both the process and raw materials before production and before every new step in the process. According to Cook and Jones (2015), these African garment producing companies seldom exploit economies of scale, nor are they exposed to significant competition. They further stressed that their technological gap with the rest of the world are usually wide-yielding. Therefore in order to achieve the large opportunities available, there is the need for learning and also to imbibe in these companies effective cost of production, quality design and timeliness.

### 2.4.1 AGOA initiative

Existing empirical literature evaluating the impact on Sub-Saharan African (SSA) exports to the USA has primarily focused on trade volumes as well as values (Cook and Jones, 2015). Manufacturing in Africa has been in a low-productivity corner. This is due to African companies only experience to small domestic (Cook and Jones, 2015). So in order to expand and achieve world recognized standards, quality control procedures have become mandatory.

The African Growth and Opportunity Act (AGOA) were enacted by the 200th congress of the United States. This was public law 106 came into existence on the 18th of May, 2000, and has been renewed to 2025. This legislation significantly enhances market access to the US for qualifying Sub-Saharan African countries. These countries ought to be improving their rule of law, human rights, and respect for core labour standards. Ghana is a member of the AGOA initiative.

All garment and clothing companies in Ghana have to undertake a customer satisfaction data to identify their customer needs. These can be done using the Negative Feedback Analysis; Proactive Feedback and finally, Analysis of competitors' product.

### 2.4.2 Negative feedback analysis

In this analysis, customer complaints are analysed together with warrant claims and repair records. Focus is placed on the problems by identifying underlying defects and other rework. Most companies concern should be that many dis-satisfied customers do not complain. As only about one out of twenty (1/20) complain (Sailanawala, 2012).

### 2.4.3 Proactive feedback

In this method customers are asked for their opinions. This is normally done through customer surveys, focus groups, using employees as customers. The advantage in this process is that key product features are identified and the level of performance of product is assessed.

### 2.4.4 Analysis of competitor products

In this analysis, the competitors' products are used as a form of benchmarking. This allows the company to know how well they are positioned with respect to their competitors.

## 2.5 Principles and Elements of Design

From literature, (Qiu and Hu, 2015), identified that the analysis and judgment of choice of clothing is based on market demand and trends for functional clothing design patterns. They further stated that, it is combined with the motion characteristics of human body, physiological status and environmental factors. However, Jung (2015) emphasized that the goal of an apparel or clothing designer is to create aesthetically pleasing garments by manipulating design elements conditionally based on design principles. Also, Jung (2015) confirmed what (Rosen (2004) identified that, the characteristics of each of these elements and principles are explained based on their own domain and categorization in various fields.

The principle of design (i.e. the unique arrangement of the elements) is based on some aesthetic system. The principles of design govern the relationships of the elements used and organize the composition as a whole. The principles of design consist of: Balance, harmony, emphasis, proportion, rhythm, repetition and unity among others (Jung, 2015).

One of the components in creating a design is the art elements. The elements and principles of design are flexible and normally need to be interpreted within the context of current fashion. A design can be defined as an arrangement of lines, shapes, colours and textures that create a visual image (Sumathi, 2007). Design principles denote how

elements are combined. These elements are therefore the raw materials that must be combined successfully. The following comprise the different elements of design:

**Line**

It is a distinct, elongated mark as if drawn by a pencil. Eyes follow lines up, down, side to side or around. When the line is straight it depicts bold and severe, suggests dignity, power and formality.

There are several types of line. Some notable ones are:

**Curved** - rounded, circular or flattened out; this type increase the size and shape of the figure and give a soft, gentle, youthful, charming, graceful and flowing feeling. Curved lines are seen in the inner and outer edges of the collar.

**Vertical Line Directions Vertical** - up and down; this gives the impression of being taller/thinner and normally gives a feeling of dignity, strength, poise and sophistication

**Horizontal Line Directions Horizontal** - from side to side, like the horizon; this gives the impression of being shorter and heavier.

**Line Directions Diagonal** - slanted, the degree it is slanted determines the visual effect on clothes.

**Shape**

This shows the overall outline of a garment in the form or silhouette. The overall shape of a garment is its form, silhouette, or outline. The shape is created by the cut and construction of a garment. Clothing shapes help emphasis a person's good features and hide the unattractive ones. Shapes can be used in garment making to allow a person become larger, wider or fuller. It can also make a person appear smaller, trim or compact

silhouettes. Shapes can also make a person look taller or shorter. However, form fitting clothes reveal any unattractive contours a body might have.

**Texture**

Texture is another element of fashion design. Fabric or other materials, such as trims and bindings for clothing and accessories, can have a variety of textures, all of which can affect the look of a garment or fashion accessory. The weave and texture of a fabric have an impact on the way it drapes, which, in turn, affects the way a garment looks when it is worn.

**Colour**

These elements are considered as "Plastics" in art language because they can be manipulated or arranged by the designer to create desired illusions (Sumathi, 2007).

## 2.6 Garment Design

Garment Design refers to those activities involved in creating the styling, look and feel of the product. It also includes the garment's emotionless planning, selecting materials and processes, and manufacturing the various patterns necessary to make the garment.

Different designers work in different ways. Some sketch their ideas on paper, others drape fabric on a dress stand, pinning, folding and tucking it until the idea for a garment emerges. A third method is to adapt to the produced patterns from previous seasons (this method can give continuity to a fashion studio's output).

Below is the process involved in the designing of a finished garment.

□□Making a toile or muslin: After making a rough paper pattern, or life-size 2-D plan, of the garment, a sample machinist (or skilled sewing machine operator) then makes a

trial version of the garment from plain-colored calico. The toile (called muslin in the U.S.) is put on to a dress stand (or a model) to see how it fits and whether it hangs properly.

□□Making a card pattern: When the designer is completely satisfied with the fit of the toile (or muslin), they show it to a professional pattern maker who then makes the finished, working version of the pattern out of card. The pattern maker's job is very precise and painstaking. The fit of the finished garment depends on their accuracy (Sumathi, 2007).

All these procedures are not performed by the small scaled dressmakers in the study area, as most of them have adapted the 'free hand' method.

**Defects in Design**

Design defect in garment production is one of the main theories used by customers in product liability cases against small-scaled dressmakers. This theory can also be difficult to defend against. This is because the basis for proving a design defect is subjective and open to interpretation by the customers and professionals.

## 2.7 Garment Construction and Production

Quality related problems in the manufacturing of garment like sewing, colour, sizing or garment defects should never be ignored (Rahman et. al. 2010).

A garment is constructed by cutting the fabric into parts with the aid of patterns which fit the human form, and then the different parts are joined together by sewing.

The creation of clothes is an art that requires much skill. It involves the human figure, as knowledge of its lines is necessary in order to correlate them with the lines of one's dress.

In the past, people wore clothes because style dominated the situation, but today one dresses for individuality- to make one look attractive. Now clothes are chosen for both style and individuality. The thought that should influence a dressmaker or designer is how to make the wearer or customer more beautiful.

In planning a garment the dressmaker should consider it as a whole, that is, first the kind and type of dress for the wearer, then the details of the design and trimmings among others in relation to the whole. This process carries but the idea of proportion in the parts and the whole, but the similarity parts should not be such as to make it monotonous. Two distinct outlines are noticed when a garment is carefully analysed, these are the outline of the whole, sometimes called lines of the garment, which form the structural design, and within the dress other smaller outlines or lines formed by the collar, panel, yoke, tucks and other trimmings which are known as the decorated design


**Figure2.1: Pattern construction of a garment (Clothing and Style)**

**Pattern Production**

Pattern production may be done in one of the three ways, namely; drafting, draping or modelling using muslin or paper and modelling on dress form.

Patterns fall into classes namely; drafted and commercial or stock patterns. In selecting pattern there is the need to choose very carefully, considerations should be given to the use of the garment, figure, age, size, material, cost and occasions.

**Overcoming Defects**

The process of overcoming defects is by producing to specifications. For a product to conform to specification means a product style or garment specifications is set out. That is, the material to be used for the garment, the size range for manufacturing, the product assembly sequence, product finishing procedures and component specifications are performed (Monitor quality controls and procedures in clothing production' (2009).

The following suggestions will show how to appear normal in form. Persons with tall figures desire to look normal, or shorter than their actual size and vice versa. In order to achieve that their clothing should be given an after image of shortness and increase the width of the body and vice versa.

**How to Cut Cloth**

After the design has been made the cloth should be prepared for cutting. The cloth may be cut folded; lengthwise, crosswise or on the true bias. A piece of cloth is laid out very carefully by the designer to conform to certain specifications. While cloth may differ in details, the general structure of fabric follows a uniform plan.

**Equipment**

The equipment and supplies used in making a costume or garment are scissors and shears, tape measure, pins, yard stick, iron, ironing board, sewing machine and tailors' chalk among others.

**Sewing**

Sewing or stitching may be done by hand or machine. Hand sewing is more expensive, but it is very effective in certain parts of garments. There are two types of machines for sewing, namely; the double thread or lock-stitch machine, which is the common sewing machine using two threads and valuable because it gives the same stitching of both sides. The single thread or chain-stitch machine, which uses one thread and can be used only for sewing on the right side of the cloth, as the loops of the underside are not artistic.

**Seams**

Seams are used to join the parts of a garment. There are several varieties of seams and seam finishes, each adapted to contain kinds of material. The most important are French seam.

**French seam**

It is used to join pieces of on sheer materials and lightweight fabrics which are frequently laundered.

**A turned in Seam**

It is an imitation of French seam. This is used where design has to be matched and where it is desirable to secure the effect of a French seam.

**Flat fell Seam**

It is used where a flat finish is necessary, as on the shoulders of middy blouses, shirt waist, men's shirts and boy's blouses. It may be placed on the right or wrong sides of the garment and either hemmed or stitched flat.

**Plain seam**

It is used where a flat, inconspicuous finish is necessary. It is generally used on tailored garment and on materials through which the finished edges will not show from the right side.

**Final Finishing of Items**

If there is fullness at the top of the hem, it may be regulated by gathers. If the material is thin or on wool when it is to be pressed out by darts, it is placed at right angles to the edge of the hem. This turns them all in one direction toward the left for ease in stitching and pressing.

**Facings**

Facings are used as finish for edges of parts of garments and sometimes as a decoration. A facing may be applied on the right or wrong side of the garment. Unlike binding, it shows on one side only.

There are four varieties of facing, namely; straight facing, bias facing, shaped facing or fitted facing and exceptional facing. There is also extension facing which is used in lengthening a dress or for decoration.

## 2.8 Defects in Construction

When the construction of a garment differs from given specifications. For instance when specification request "v" neck, garment might have a different neck type, incorrect colour combination, high/low pocket or shoulder, incorrect placement among others. Any deviation from construction specification is considered as defective.

Garment defects can be separated into three categories, namely; fabric defects, workmanship and handling defects and trims, accessories and embellishment defects.

### Fabric Defect

These are defects that are found in the fabric. These are mostly not caused by the sewing lines, for example, running shade, selvedge shade, holes, staining mark, missing yarn, foreign yarn, and hairiness among others.

### Workmanship and handling defects

These are defects that are directly caused by the production section. This occurrence results from both the cutting and sewing section of the production unit. Customers' approval of the finished garment is measured to the quality of workmanship. Workmanship means all details such as measurement, outlook and ways of attaching trims.

### Seam Puckering

This refers to the gathering of a seam either just after sewing or after laundering causing an unacceptable seam appearance. This problem arises due to uneven stretching on to piles of fabrics during sewing, improper thread tension, wrong sewing thread selection and dimensional instability of plies of fabric among others.

**Shading**

This happens due to variations which occur within different parts of finished garment due to improper cutting.

**Open seam or broken seam**

This happens when a portion of the garment is not covered by sewing thread due to improper handling of the parts of garments, improper setting and timing between needle and looper or hook among others.

**Broken stitch**

This is a non-continuous sewing thread. It appears due to improper trimming or machine usage.

**Drop stitch. Skipped stitch**

This is an irregular stitching along the seam. It appears due to improper handling of cut pieces or machine usage.

**Wavy/ staggered stitching**

This occurs when stitches are not straight. It appears due to improper handling of cut pieces, faulty feed mechanism, needle deflection or wrong needle.

**Uncut/ loose thread**

This occurs when extra thread or loose thread are seen on seam line. It appears due to improper trimming or finishing.

**Poor Ironing**

If the ironing is not sufficient, creases and crinkles will occur on the surface of garments. Also if the ironing is too heavy, there might be shining mark on garment.

**Misaligned buttons and holes, unfinished button hole, missing buttons, wrong placement of labels**

All these defects come from the finishing section.

**Trims, accessories and embellishment defects**

These defects include unmatched colour of sewing thread, screen print, embroidery designs, faulty zippers, lining, button and any kind of trims.

## 2.9 Classification of Defects

Defects are also classified (as per extent of defects) into critical, major and minor defects.

**Critical Defects**

These are defects that which when appear destroy the fabric as well as the finished garment, therefore are not given to the customer.

**Major Defects**

These are serious defects that are not allowed to be given to the customer.

**Minor Defects**

These are defects that are not serious to the customers or buyers requirements.

## 2.10 Quality Control of Garment Production

Quality is defined as the conformity of a product to the requirements of the customer or consumer, which in the long run results in the suitability of the product for use (Buntak et. al., 2012). The quality of a product can further be defined as the level of acceptance of goods or services. For the textile and garment industry, the product quality is expressed in

terms of quality and standard of fabric construction, colour fastness, designs and the final finished garments (Islam et. al., 2012).

Quality is however, subjective and therefore to be made objective, there is the need of control. Hence quality control procedure can be used in such a move. Also, in modern practices today, quality management is being promoted worldwide as a tool to ensure customer satisfaction. Total quality practice includes both product quality and service quality (Buntak et. al., 2012). It therefore implies that for customer satisfaction to be met it is very important to work towards setting a standard for the small-scaled dressmakers. These standards should spell out indicating all attributes and features that should be present to make a garment produced qualify to be 'quality'. Basically, there are two methods used for garment quality control, namely; Testing and Inspection. Quality control system is followed by all concerned within the dressmaker's business from fabric inspection to the final statistical audit.

Benefits to be gained in quality control practices include: encourages quality consciousness; satisfaction of the customer; reduction in production cost; most effective utilization of resources; reduction in inspection costs; increased goodwill; higher morale of employees; improved employer- employee relationship; improved techniques and methods of production; effective advertisements; facilitates price fixation and increased sales (Chand, 2016).

### 2.11 Mitigating Factors Impeding Achievement of Quality of Garment Produced

A lack of knowledge about apparel or clothing design holds back the design principle (Jung, 2015). Garment producing businesses performances have been a consistent area of

research by scholars from various spheres of life. Previous research indicates numerous factors have influenced on businesses performance and quality of final products. These include their level of education, entrepreneurial capabilities, cultural beliefs, as well as the technology and micro environment (Makhbul, 2011).

Yamada et al. (2012), indicate that although Quality Control Management practices is expected to improve customers' satisfaction and at the same time reduce non-quality costs, barriers still exist. The results are a factor of so many causes, some include; lack of support of company's leadership; lack of communication; plenty of bureaucracy; lack of training and employee development; lack of technical knowledge; resistance to change; lack of shared responsibilities among departments and existence of different subcultures (Mangino, 2001).

Employees in any business seldom take responsibility for the quality of work they produced. A firm will however, incur full cost of production even if the garments produced are rejected. Although some rejected garments can be re-worked, others become scrap leading to more costs. Quality control is effective only if defective garments produced are prevented from reaching the customer. When defective levels are high, the company's profit will suffer. Steps therefore need to be taken to tackle the root causes of all failures.

Hoonakker (2006) argued that these barriers or mitigating factors can be overcome by effective communication, whereby management become very committed to the Quality control practices by involving all employees through a form of empowerment.

Harding (1975) and later Gupta (2007) identified three types of cost to a company when quality control practices are not met. These include; failure costs; appraisal costs and preventive costs. A classification of quality costs is shown in Table 2.2.

Lack of quality control measures to all aspects of the production run affects the overall productivity level of operations. There is also the problem of profit margins not been met by the garment producing company which in turn will affect the cost of production? Customer satisfaction also falls due to quality of product not meeting their expectations leading to cognitive dissonance (Morgan, 2018).

**Table 2.2: Classification of Quality Costs (Harding, 1975).**

| Types of cost | Classification | Explanation |
|---|---|---|
| FAILURE | | |
| Internal | Scrap | Waste material through defective work |
| | Rework | |
| | Shut-time | Machine sheet while product repaired |
| | Extra operations | Inherent in some faults |
| | Poor yield | Waste through poor process control |
| | Give-away | Excess product packed |
| | Repair | Putting right defective work |
| External | Customer returns | |
| | Complaints | Part-payment or credit to customer |
| | Consequential loss | Caused by defectives |
| | Guarantee claims | |
| | Field repair and down grading | Putting right faults at customers' premises |

| Types of cost | Classification | Explanation |
|---|---|---|
| APPRAISAL | Goods-inwards inspection | Including training of inspectors |
| | Process-control inspection | " " " " |
| | Process accept/ reject inspection | " " " " |
| | | " " " " |
| | Final inspection | " " " " |
| | Commissioning and field trials | Testing machines |
| | Inspection equipment Reliability testing Special equipment acquisition | Designing and making special instruments |
| PREVENTION | Process capability studies Process improvement Control instrument design | Measuring what specifications machines can meet |
| | Customer liaison Supplier quality assurance | Technical service work |
| | Quality training | Other than inspectors |

**2.12 Measures to be applied in Achieving Quality of Garment**

When the customer is satisfied it is deemed that the garment produced is of the required quality. Failure to maintain an adequate quality standard can therefore be unsuccessful. But maintaining an adequate standard of quality also costs effort. Investigation is thus needed to find out what the potential customer for a garment really wants, through the processes of design, specification, controlled manufacture and sale.

Hoonakker (2006) identifies quality indicators in production as teamwork, continuous improvement, management commitment, communication, customer or client focus, employee involvement or empowerment. Together with these indicators are a number of

other factors on which quality fitness of a garment producing company is based on, these include; performance, reliability, durability, visual and perceived quality of the garment (Alagulakshmi et. al., 2015).

The design and fit of a garment affect both the protective and comfort aspects of a garment. Proper garment fit depends on the relationship between its size and the size of the customer. Garment ease can either be too large or too small. Although when it is too large, the customer experience some form of comfort and mobility it still possesses a form of lack of confidence. When it is too little, the customer feels very restricted in movement and very uncomfortable (Huck, et. al., 1997). Hence, designing to fitness would always ensure effective quality control.

### 2.13 Methods of Quality Control

When it comes to choosing methods best for quality control practices, any garment producing company needs to identify a system that can adequately test the product or garment produced. There are four main processes of quality control identified by Harding (1975) and later confirmed by Loucks (2002). These include; new-product specification; inspection of materials and production; product investigation and improvement; and process investigation and improvement.

Basically, two methods are normally used in the garment or clothing industry in assessing quality control practices. These are testing and inspection (Rahman et al. 2009). The testing process starts first with the identification of the causes for garment or process defect. In this regard the company might benefit from final garment testing which normally aims at uncovering any weakness might have accrued to the final garment

produced. The second method is the inspection process, determines whether the method of measuring performance levels accurately find the deviations in the quality of the product. If that is not achieved, then the company needs to improve its method of statistical control. This is a quality control system that helps create normal distribution when it comes to the quality of the product (Management Study Guide, 2018).

Quality Control systems, processes or procedures ought to be followed by every worker involved, right from piece goods inspection to the final statistical audit (Harding, 1975; Elsayed and Dietrich, 1992; Rahman et al 2009). It is important to communicate the need and benefits to all employees within the company. Processes and procedures that support shared decision-making and effective communication within the company; should be available and followed (Dimitris and Chorafas, 2013).

The main raw material in the apparel or garment manufacturing industry is the fabric, others include; different types of trimmings and accessories. In the process of production, operational wastage also occurs. These waste include; top surface re-work, printed label re-work, sewing fault re-work, pinhole re-work, fabric re-work, improper fly shape, and other re-works (Islam et al. 2013).

In all production flow there is a continuing need to monitor quality. Control charts are used extensively to monitor and control quality levels of garment produced. A hundred percent (100%) inspection and testing are impractical, uneconomical, or impossible, therefore, acceptance plans may be used to determine if lots of products are likely to meet customer expectation (Loucks, 2002).

According to Loucks (2002), the best time to inspect during production process is when tackling operations that are costly. Critical operations that are likely to produce faulty or

defective piece should always be inspected. Inspection also needs to be conducted on operations that cover up defects. Finally, finished garments ready for market should also be inspected.

## 2.14 Summary of Related Literature

The current global market and fast changing economic environment has resulted in declining profit margin, customer demand for high quality product, product variety and reduced lead time etc. in the garment industry (Elsayed and Dietrich, 1992; Gupta, 2007; Islam, et. al., 2013). The demand for such higher value at lower price is now paramount, and to survive in the garment industry calls for the production of garments right the first time (Islam, et. al., 2013).

The increased emphasis on higher quality products at lower costs, combined with world-wide market competition has led to most companies using 'quality' as a driving strategy to increase their participation in this rapidly expanding market (Elsayed and Dietrich, 1992; Akter, 2013). There is an uncontrollable quest for quality in the production processes as well as the final product. Companies are therefore concentrating in the monitoring of all the various activities involved in the various departments within the organization and are thus, ensuring and improving their processes and products (Santis et al., 2015).

Large scale garment producing companies in Ghana, specifically in the Accra Metropolis, are trying their best to enter this global market, however, it has never been easy. Their main customers have predominantly been the local market, yet few have been to explore the neighbouring market and have also taken the AGOA initiative to the United States

market. Their main challenges have always been the quality of their final garments produced. This has arisen as a result of high cost of production, that waste in the production process have been identified leading to a lot re-work as well as failing to meet dead-lines as a result.

Quality control practices ought to be imbibed in their production processes. This is because quality of a product determines the success or failure of a company. Their customers or consumers expect this garment producing companies to maintain high level of quality in order to obtain satisfaction for what they are paying for. This level of quality can be achieved if an extensively market research, monitoring of competition to be encountered in the global market is assessed. There is also the need for original creation and scientific approach in the final product that gets to the market (Colovic, 2014).

Hence, quality control practices when effective applied in all departments under efficient supervision would make such companies gain international recognition, by producing the best garment, at a less cost and also meeting time-lines of their respective customers.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 Research Design

The research design is the plan employed in achieving the research objectives and answering of the research questions (Wee and Banister, 2016). This provides a framework for data collection and their analysis (Kothari, 2004; Bryman, 2015). The study of the design was formed in a way to make it possible to assess the quality control management practices in some selected large scale fashion companies in the Accra Metropolis. Quantitative approach was used for the study with descriptive methods to discuss the results. This particular method would be adopted since the primary aim of the study is to discover facts and obtain insights into the case under study.

## 3.1The Study Area and Population

This research was conducted in the Accra Metropolis for large scale garment producing companies. The study area is the capital town of Ghana. Currently, it has currently a population of about 2.57 million as of 2012. It has a population growth rate of about 2.19%. The map below is the map of Accra, capital town of Ghana.

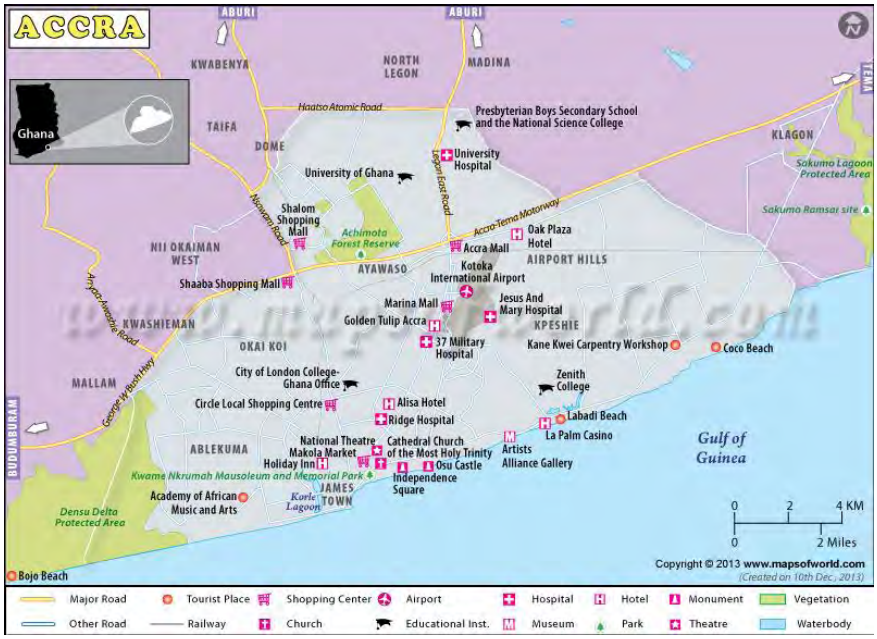


**Figure 3.1: Map of Accra**

### 3.2 Sample Procedure and Size

The researcher employed the non-probability sampling procedures in selecting the respondents who constituted the sample size. The purposive sampling technique was used to select the individual large scale garment producing companies in the Accra Metropolis. The purposive sampling technique was considered because; it provided the researcher with a great opportunity to obtain certain specific information considered more significant to the study. In addition, purposive sampling technique had high validity and also was very flexible.

According to Caulcutt (1995), in carrying out an investigation, information is being bought, therefore the cost of investigation may well be directly proportional to the sample size, but the amount of information may only be proportional to the square root of the sample.

The following three conditions were maintained for ensuring the selection of a representative sample from all large-scale garment producing companies in the Accra Metropolis.

1. Equal opportunity: Each company has the same opportunity of being selected.
2. Appropriateness: The sample must precisely reflect the characteristics of the population.
3. Independence: Each company is selected independently of any other company.

A thorough investigation on the ground by the researcher identified about 40 prospective garment producing companies who fall under large-scale companies in the Accra Metropolis.

In sampling of operations, a confidence level of 95% and an absolute limit of error of plus or minus 5% are usually postulated by (Chan et al. 1995).

The determination of the sample size was based on the Kish formula (1965);

$$n = \frac{n'}{(1 + \frac{n'}{N})}$$

Where,

n = sample size

$n' = S^2/V^2$

N = Total population

V = the standard error of sampling distribution

S = the maximum standard deviation in population elements

(Total error = 0.1 at a confidence level of 95 %)

$S^2 = P(1-P) = (0.5)(0.5) = 0.25$

P = the proportion of population elements that belong to the defined companies

Substitute the predefined variables:

Sample size, $n = \frac{0.25/ (0.05)^2}{[1 + \frac{0.25/(0.05)^2}{}]}$

$40 = 29$

Approximately, 30

### 3.3 Data Collection Procedures

As mentioned earlier, the data collection was conducted using the instrument of questionnaire. Two sets of questionnaires, one for the large scale garmenting producing companies in the study area for the customers were administered. Close ended questions was selected to collect the field information for this study. The questions sought responses on demographic factors of the large scale garment producing companies as well as employing the Likert scale ranking form. The measuring instrument provided some range of options to select from. A complete copy of the two sets of questionnaires can be found at appendix '*A*'.

A quantitative methods was adopted. However, the quantitative method was used more for the kind of information the research sought to unravel. The questionnaire was a very convenient tool for collecting data as the researcher was present with the respondents to explain in details every question for their input.

**i. Focus Group**

The respondents were selected from two focus groups. The first group is the large scale garment producing companies in the Accra Metropolis and the other group are the customers of these fashion companies, which include lecturers and final year students in fashion and textile departments of tertiary institutions and those residing in Accra.

The distribution of the respondents in terms of professional orientation constituted of lecturers and practicing tertiary institution fashion students.

**ii. Questionnaires**

There are several ways of collecting primary data, particular in surveys and descriptive researches. The important ones are; observation method; interview method; through questionnaires; through schedules and other methods.

The method of data collection through questionnaires is adopted mainly by private individuals, research workers or students, private and public organisations and even governments. A questionnaire consists of a number of questions printed or typed in a definite order on a form or a set of forms (Kothari, 2004).

Two set of questionnaires (see Appendix 'A') were presented to the large scale garment producing companies and the other set to customers of these companies for answers to be provided for them. Before coming out with these questionnaires, a pilot survey of these questionnaires was given to lecturers and experts in the fashion institutions and industry for their input and improvement. These customers were selected from lecturers and fashion students in tertiary institutions in Accra. The questions sought to know the views of these respondents on the issues presented to them. In asking these questions, there

were two main options involved. These were open and close-ended questions. The open-ended questions required the respondents to provide their own answers to the questions; whereas the close-ended questions allowed the respondents to select their answers from a list of answers provided by the researcher. For the purpose of this study, both open and close-ended questions were used in order to come out with the real situation and views of the respondents.

### 3.4 Ethical Consideration

Ethical issues may arise at different stages in the research. Considerations have been given to the research, so that participants' views are protected and all have been promised that they will be kept anonymous. The large scale garment companies and their customers used in this research will not be identified by names. The companies will only be identified by descriptions, likewise the customers.

### 3.5 Data analysis and Presentation

The analysis of the data from the completed questionnaires takes both the descriptive and statistical test forms. As a result, pie charts, line graph were used. The questionnaire has two main sections: the respondents' personal details section and the quality control of garments production process and products from large scale companies in the Accra Metropolis. The details of the large scale garment producing companies was analysed using the descriptive analysis method which were illustrated with pie charts. The quality control of their practices was analysed using the combination of the descriptive analysis and the statistical test methods. The descriptive analysis method was utilised to give the

general overview of the results, while the statistical test analysis (Microsoft Excel) was used to compare the perception of customers of quality control practices of large scale garment producing companies in the Accra Metropolis by both professional and students' customers. Line graph and simple percentages will be used for the descriptive analysis which showed the general trend and quality control practices of these large scale garment producing companies in the Accra Metropolis in relation with the quality control principles and philosophies reviewed at the literature chapter.

The data collected are attitudinal in nature. Hence, could either be categorical or numerical form of measurement scale. The choice between categorical and the numerical type of data which the Likert scale uses depends on how best the study population are able to express themselves on each of the scales developed for a measuring instrument (Kurmar, 1999). The categorical scale was chosen based on the consideration of the above factors including how they are to be analysed. The question type requires the respondents to rank by circling the appropriate rank number which was arranged starting with extremely unsatisfied as rank '1' to extremely satisfied as rank '5'. The question was designed in consideration with the objectives of the study. This was for the questionnaires addressed to the customers. However, the questionnaire addressed to the garment producing companies started with the rank of '1' for 'strongly disagree to '5' being ranked as 'strongly agree'.

# CHAPTER FOUR

# RESULTS PRESENTATION AND DISCUSSION

## 4.0 Introduction

This chapter presents the data obtained from the questionnaire survey, structured interviews from respondents as well as personal observations of the study.

Two sets of questionnaires were analysed, one for some selected large-scale garment producing companies and the other to customers of these companies. The relevance of the questionnaire was structured in line with the set aim and objectives. Confidentiality was assured to the respondents, hence, no name or organization name was included.

## 4.1 Response to the Questionnaires

From the chapter three it was explained that, a total of 30 questionnaires were sent to the selected large-scale garment producing companies. However, 24 of the questionnaires were returned representing 80% returned rate. The second set of 30 questionnaires were also sent to the customers of these selected large-scale garment producing companies, 24 of them were returned representing 80% response rate. The respondents from the selected large-scale garment companies were all senior management level staff. Also the customers selected for the survey were all patrons of these companies and include; lecturers from Tertiary education in the Fashion Departments as well as students with a minimum qualification of HND Fashion and Textiles.

## 4.2 Details of Customers

The background information of the details of the various respondents contacted for the survey is presented. This is relevant in order to prove that the respondents are really customers of the large-scale garment producing companies under study. Lecturers and students from various tertiary institutions who are customers of these selected companies were chosen. As a result, information were assessed about the gender of the respondents, the age, level of academic qualification, profession, type of customer, percentage of garments re-work before usage, time frame that customers have associated with the products of selected garment companies as well as whether they are satisfied with the quality of the final product.

**Section A.**

### 4.2.1 Details of Customers

Table 4.3 shows the demographic information of the respondents. The respondents' gender, age category, highest educational qualification, profession, type of customer, option for acquisition of garment, percentage of alteration of garment before usage, time frame of association with garment company and satisfaction of performance of garment company.

**Table4.1: Customers' details as presented by Respondents**

| Item | Question | Responses | f | (%) |
|---|---|---|---|---|
| **1** | Gender of Respondent | Male | 6 | 25 |
| | | female | 18 | 75 |
| **2** | Age of Respondent | < 25 | 2 | 8.33 |
| | | 25-31 | 3 | 12.5 |
| | | 32-38 | 6 | 25 |
| | | 39-45 | 5 | 20.83 |
| | | >45 | 8 | 33.33 |
| **3** | Level of Academic Qualification | | | 0 |
| | | PhD | - | |
| | | 2nd Degree | 12 | 50 |
| | | 1st degree | 8 | 33.33 |
| | | HND | 2 | 8.33 |
| | | Ordinary Diploma | 2 | 8.33 |
| **4** | Profession | | | 50 |
| | | Fashion Lecturer | 12 | |
| | | Fashion Students | 12 | 50 |
| **5** | Type of Customer | | | |
| | | Internal | 8 | 25 |
| | | External | 16 | 75 |
| **6** | Option for Acquisition of Garments | Small-scale Companies | | 0 |
| | | Medium-scale Companies | 0 | 100 |
| | | Large-scale Companies | 24 | |
| **7** | Percentage Alteration of Garments before Usage | None | 14 | 58.33 |
| | | Up to 25% | 4 | 16.67 |
| | | Up to 50% | 4 | 16.67 |
| | | Up to 100% | 2 | 8.33 |
| **8** | Time Frame of association with garment company | Less Than a Year | 4 | 16.67 |
| | | 1-5 years | 16 | 66.67 |
| | | 6-10 years | 2 | 8.33 |
| | | over 10 years | 2 | 8.33 |
| **9** | Satisfaction of Performance of Garment Company | Yes | 18 | 75 |
| | | No | 3 | 12.5 |
| | | Indifferent | 3 | 12.5 |

### 4.2.2 Gender of Respondents

From Table 4.1, the gender of the respondents showed 25% to be male and 75% being female. This indicate that the Ghanaian fashion industry, there are more female population to that of the male. This can even be seen in fashion departments in all tertiary institutions in Ghana. However, Kimmel (2000) indicated that nowadays there is a gender convergence rather than divergence, and women and men currently, are far more alike than they were some decades ago.

### 4.2.3 Age of Customers

Figure 4.1 shows the age range of respondents.

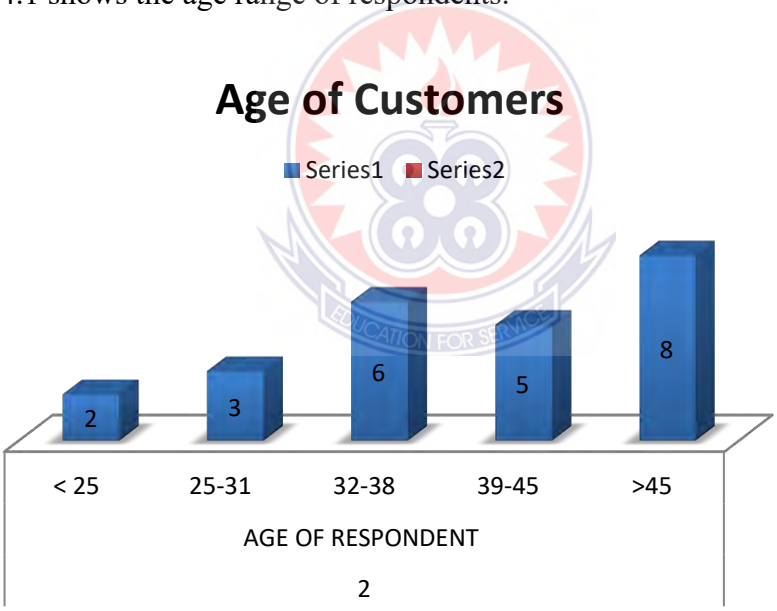


**Figure 4.1: Age of Customers**

From figure 4.1, the ages of the customers selected at random showed 8.33% to be below the age of 25 years, 12.5% were between 25-31 years, 25% were between 35-38 years, 20.83% were between 39-45 years of age while the remaining 33.33% were over 45 years of age. Since, majority (79.17%) are above 31 years, it is seen that most of the

respondents will be experience enough, that most of them would have at least 10 years practice, hence, experienced to answer the required questions.

### 4.2.4 Level qualification of Customers

Figure 4.2 shows the academic level of qualifications of customers

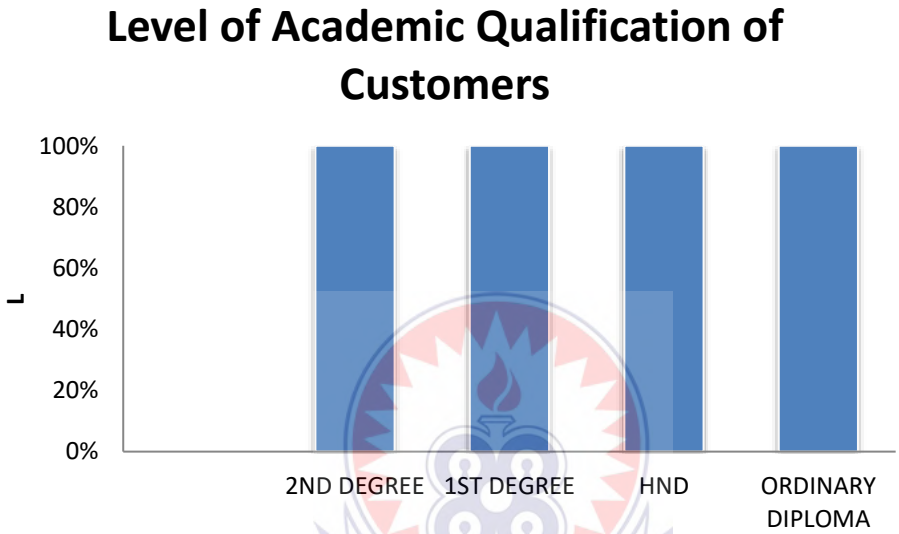


**Figure4.2: Level of Qualification of Customers**

The level of academic qualifications for the customers also revealed that none of them possessed a PHD, 50% of the customers possessed a Masters degree or equivalent, 33.33% possessed a first degree, and 8.33% possessed HND, while the remaining 8.33% possessed an ordinary diploma or its equivalent. This shows maximum level of literacy of the respondents.

### 4.2.5. Profession of Customers

From Table 4.1, the customers selected were 50% lecturers teaching in Ghana's fashion tertiary institutions, while the remaining 50% were fashion students in these tertiary

institutions who also have knowledge of the dos and don'ts of the garment producing sector, and therefore have vast knowledge on the quality of garment produced by their respective garment companies of which they are patrons. This is a proof of the level of validity of information or data provided.

### 4.2.7. Options for acquisition of Garments

From Table 4.1, customers selected depended entirely on these large-scale garment producing companies. That is, 100% of these customers indicated that they relied solely on these companies for their garments. Hence, considering is only given to customers of these large-scale garment producing companies operating in the Accra Metropolis.

### 4.2.8. Percentage alterations of Garment before usage

Figure 4.3 indicates the percentage alterations of garment before usage

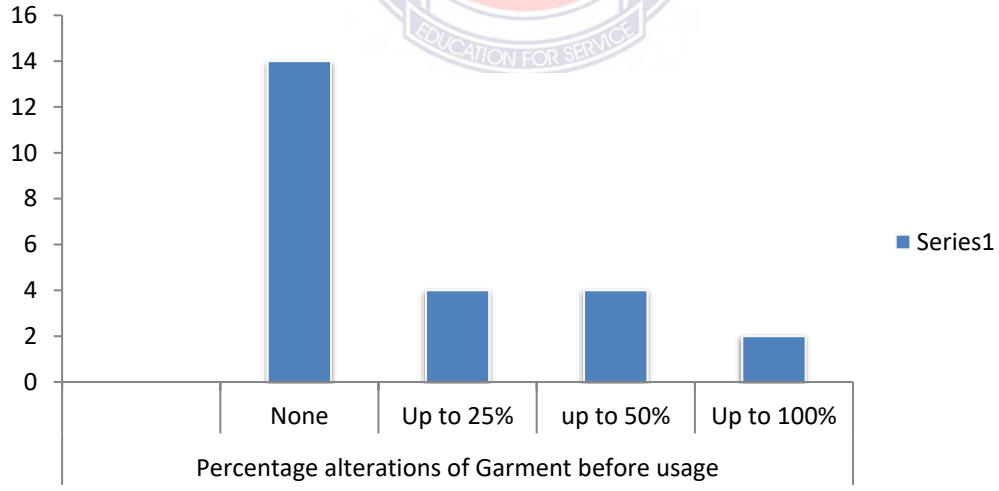


**Figure4.3: Percentage alterations of Garment before usage**

Concerning the percentage of garments acquired that are altered before usage, 58.33% indicated that every garment bought were fit for purpose without any alterations, 16.67%

indicated that alterations are done on about 25% of garments before usage, another 16.67% also indicated that about 50% of garments need re-work before usage, while 8.33% indicated alterations are done for about 100% of garments before usage.

### 4.2.9. Time frame of association with Garment Company

Figure 4.4 shows the time frame of association with Garment Company

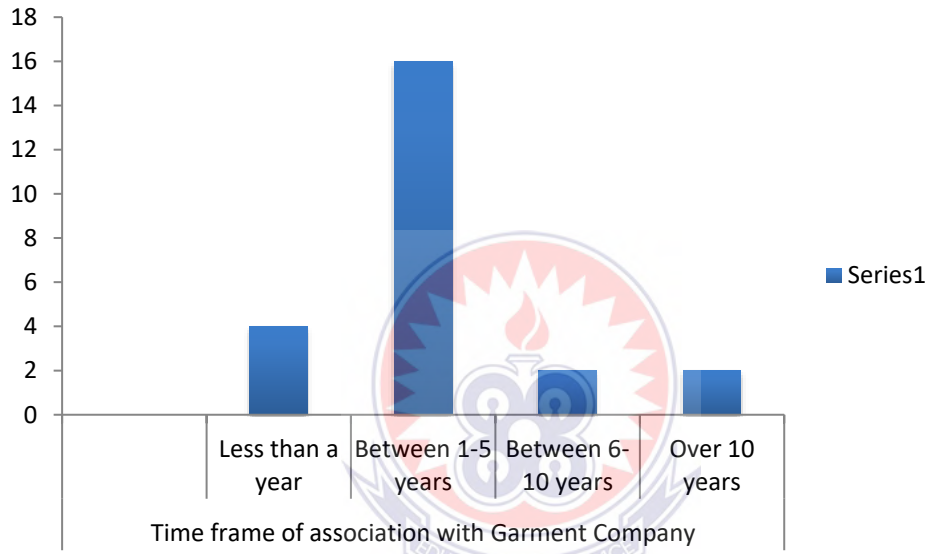


**Figure 4.4: Time frame of association with Garment Company**

From figure 4.4, about 16.67% of the customers indicated that they have become patrons of their respective garment companies in less than a year, 66.67% indicated that they have become customers to their respective garment company between 1-5 years, 8.33% indicated between 6-10 years, while the remaining 8.33% indicated that they have been customers for their garment companies in over 10 years.

### 4.2.10. Satisfaction of performance of Garment Company in terms of Quality

Customers were to indicate whether they are satisfied with the final quality of the garments produced by their respective companies with which they are patrons, 75% indicated 'Yes', 12.5% indicated 'No'while the remaining 12.5% were indifferent, that is, they are yet to decide.

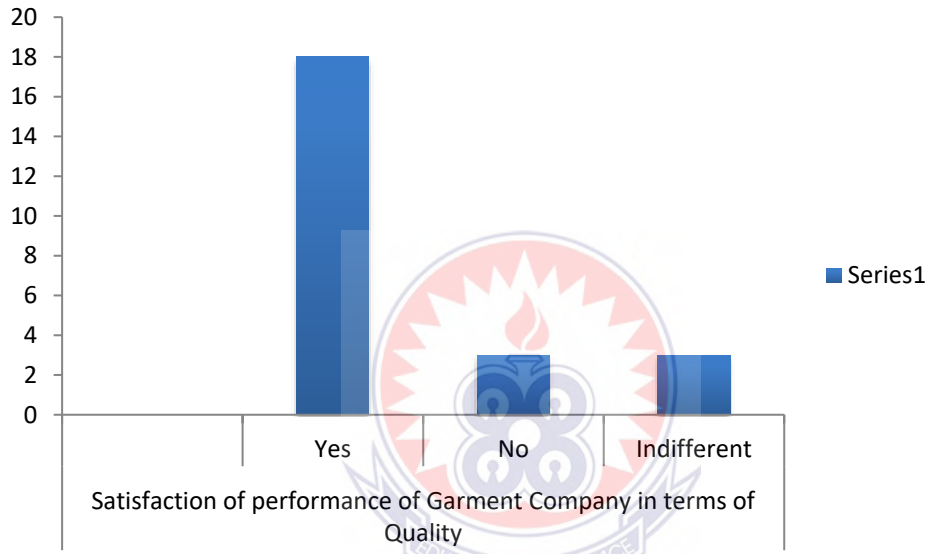


**Figure 4.5: Satisfaction of performance of Garment Company in terms of Quality**

### 4.2.11. Factors indicating defects in Design and Construction of Garments

Table 4.2 shows factors indicating defects in design and construction of garments

**Table 4.2: Factors indicating defects in Design and Construction of Garments (All Respondents)**

| NO. | ITEM | N | Min | Max | Mean Score | Rank |
|---|---|---|---|---|---|---|
| 1 | Workmanship and handling defects | 24 | 1 | 5 | 4.16 | 1 |
| 2 | Line effect of garment defects | 24 | 1 | 5 | 4.08 | 2 |
| 3 | Fabric defects | 24 | 1 | 5 | 4.04 | 3 |
| 4 | Shape of garment defects | 24 | 1 | 5 | 4.04 | 4 |
| 5 | Seam formation defects | 24 | 1 | 5 | 3.92 | 5 |
| 6 | Critical defects | 24 | 1 | 5 | 3.88 | 6 |
| 7 | Sewing defects | 24 | 1 | 5 | 3.84 | 7 |
| 8 | Minor defects | 24 | 1 | 5 | 3.68 | 8 |
| 9 | Colour combination defects | 24 | 1 | 5 | 3.56 | 9 |
| 10 | Finishing defects | 24 | 1 | 5 | 3.48 | 10 |
| 11 | Line effect of garment defects | 24 | 1 | 5 | 3.32 | 11 |
| 12 | Fitness of garment defects | 24 | 1 | 5 | 3.32 | 12 |

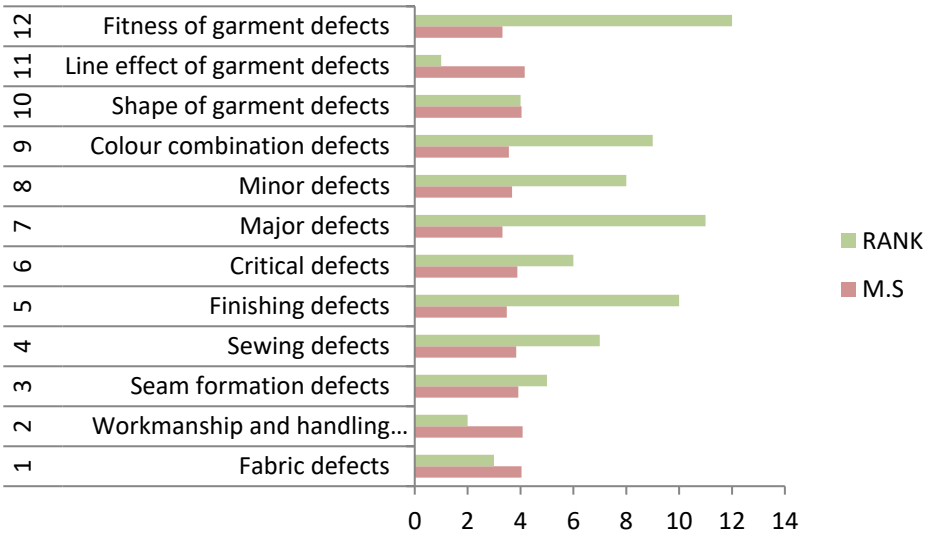


**Figure 4.6: Ranking of garment defects (Field Survey, 2018)**

From Table 4.2, the scores obtained were built into ranking using the Likert scale based on opinion and not an objective measurement. However, according to Naoum (1999), analysis could be made using factors of high and low scores and rankings of the responses.The analysis provided some information about how customers perceive the quality of garments produced by large-scale companies in the Accra Metropolis in terms of twelve (12) identified types of defects.

### 4.3 Large-scale Garment producing companies

The background information of the details of the various respondents contacted for the survey is presented. This is relevant in order to ascertain that the respondents are from their right source. As a result, information were assessed about the gender of the respondents, the age, level of academic qualification, type of firm, category of market where products are delivered, managerial position, areas of operation, and the awareness

of the respondent about the quality control management practices of their respective companies.

**Section B**

**4.3.1 Details of Company**

Table 4.3 shows the company details

**Table4.3: Company details as presented by Respondents**

| | Question | Responses | f | (%) |
|---|---|---|---|---|
| **1** | Gender of Respondent | Male | 10 | 41.67 |
| | | female | 14 | 56.33 |
| **2** | Age of Company | less than 2 years | 2 | 8.33 |
| | | between 2-5 years | 2 | 8.33 |
| | | between 6-10 years | 14 | 58.33 |
| | | Over 10 Years | 6 | 25 |
| **3** | Age of Respondent | < 25 | 1 | 4.17 |
| | | 25-31 | 5 | 20.83 |
| | | 32-38 | 8 | 33.33 |
| | | 39-45 | 7 | 29.17 |
| | | >45 | 3 | 12.5 |
| **4** | Level of Academic Qualification | PhD | 0 | 0 |
| | | 2nd degree | 3 | 12.5 |
| | | 1st degree | 12 | 50 |
| | | HND | 6 | 25 |
| | | Ordinary Diploma | 3 | 12.5 |
| **5** | Managerial Position | Quality Manager | 10 | 41.67 |
| | | Line Manager | 6 | 25 |
| | | Quality Officer | 8 | 33.33 |
| **6** | Category of Market | Domestic Only | 8 | |
| | | Export Only | 2 | 33.33 |
| | | Both Domestic and Export | 14 | 8.33<br>58.33 |

| | Question | Responses | f | (%) |
|---|---|---|---|---|
| **7** | Awareness of Quality Control Management Practices | Yes | 24 | 100 |
| | | No | 0 | 0 |
| | | Indifferent | 0 | 0 |
| **8** | Percentage of Needs of Customers Met | 50-75% | 5 | 20.83 |
| | | 75-95% | 4 | 16.67 |
| | | over 95% | 15 | 62.5 |
| **9** | Customer Satisfaction Data Used to Identify Customer Needs | Negative Feedback Analysis | 4 | 16.67 |
| | | Proactive Feedback | 16 | 66.67 |
| | | Analysis of Competitors Products | 4 | 16.67 |
| **10** | Satisfaction of Performance of Garment Company | Yes | 20 | 83.33 |
| | | No | 1 | 4.17 |
| | | Indifferent | 3 | 12.5 |
| **11** | Quality Control Management Practice Being Operated | Quality Control | 10 | 41.67 |
| | | Quality Assurance | 8 | 33.33 |
| | | Total Quality Management | 6 | 25 |

### 4.3.2. Gender for Respondents (Large-scale Companies)

From Table 4.3, the gender of the respondents showed 41.67% to be male and 56.33% being female.

### 4.3.3. Age of Company

The selected large-scale garment producing companies in the Accra Metropolis, 8.33% have been in existence less than two (2) years, another 8.33% have been in operation

between 2-5 years, majority comprising 58.33% have been operating between 6-10 years, while, 25% have been in existence and in operation over 10 years.

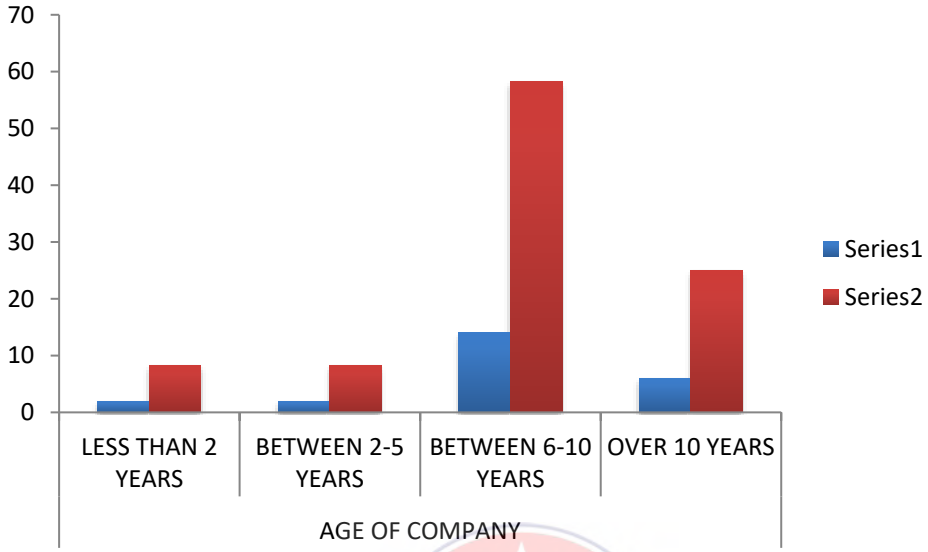


**Figure 4.7: Age of Company**

### 4.3.4. Age of Respondents

The age of the respondents for these large-scale garment producing companies are shown in figure 4.8 below. They are as follows; those below 25% constitute about 4.17%, between the ages of 25-31 years are 20.83%, 33.33% are between 32-38 years of age, 29.17% are between the ages of 39-45 years, while, 12.5% are over 45 years.

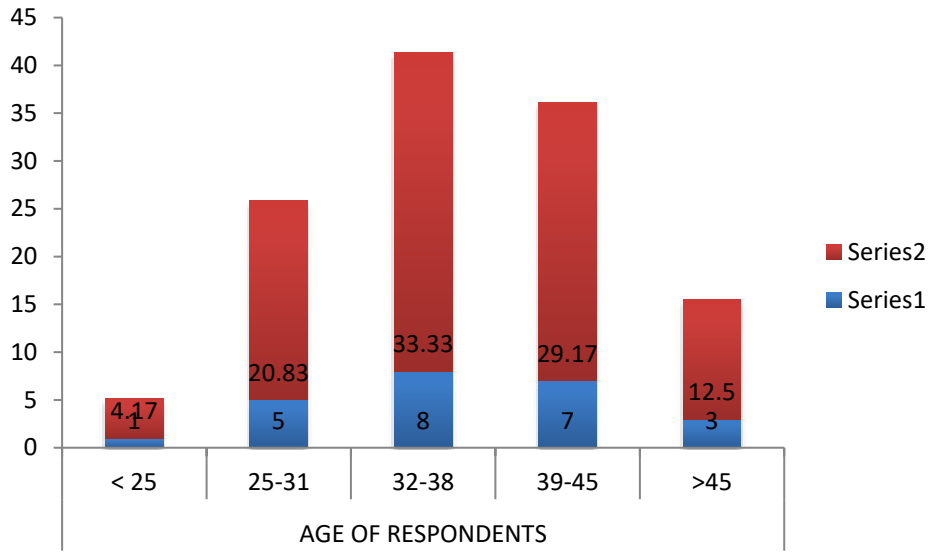


**Figure 4.8: Age of Respondents**

### 4.3.5. Level of Academic qualification

**Figure 4.9 shows the academic qualification of respondents**

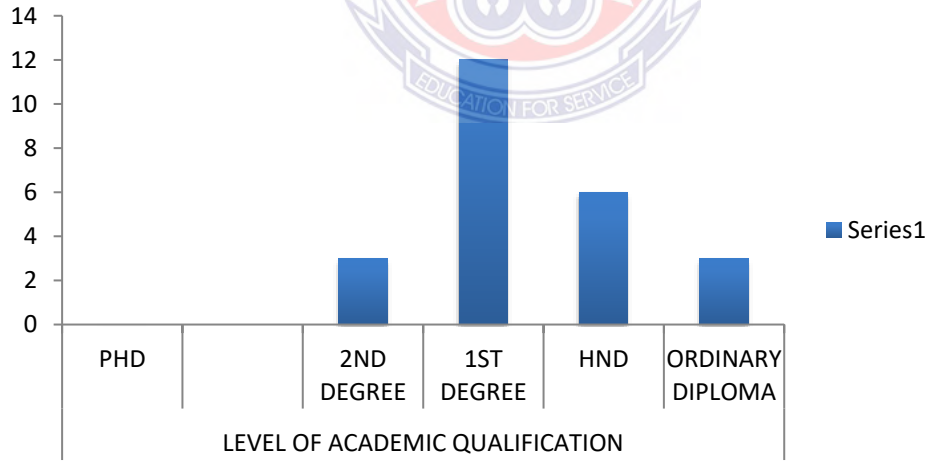


**Figure 4.9: Level of Academic qualification**

From figure 4.9, respondents level of academic qualification showed that there was not a single person with a PhD, however, 12.5% has a master's degree or equivalent, 50% had a first degree, 25% had HND, while the remaining 12,5% had an ordinary diploma.

### 4.3.6. Managerial Position

Respondents who were selected were all senior staff of their various companies. 41.67% of them were Quality Control Managers, 33.33% were also designated as Quality Officers, while the remaining 25% were Line or Department Managers.

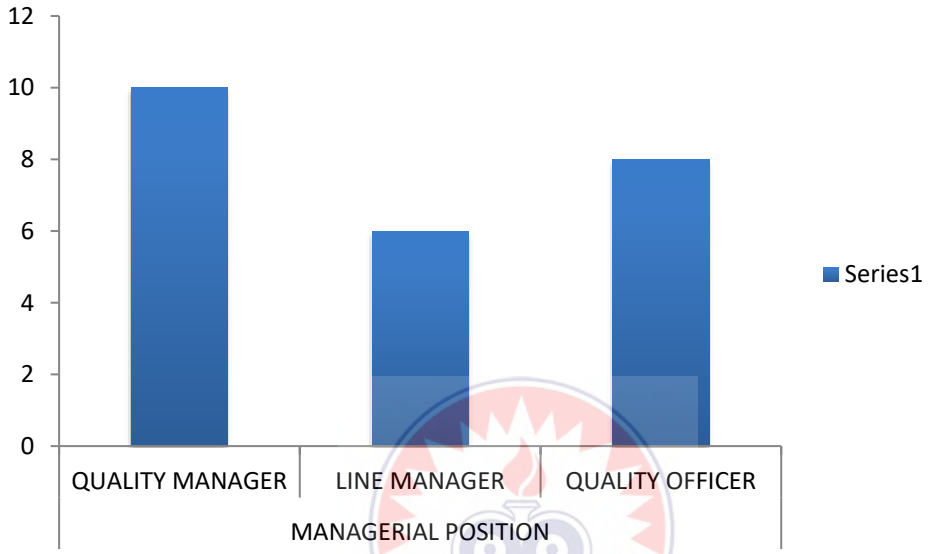


**Figure 4.10: Managerial position**

### 4.3.7. Category of market for products

Respondents were asked as to where in particular their garments produced are sold. 33.33% claimed they produce only for the local markets, 8.33% claimed they export to neighbouring countries and the United States and were even under AGOA initiative, while 8.33% claimed their products were both for exporting and the local market (see Table 4.3).

### 4.3.8: Awareness of Quality control management practices

Respondents were asked whether they are aware of Quality control management procedures, practices and systems being practised by their respective companies, all respondents, that is, 100% claimed they were in place and being practised (see Table 4.3). Quality control as a quality initiative comes along with many benefits to any company. To avoid procedures and process failures down the line, QC needs to work in close cooperation with all employees (Dimitris and Chorafas, 2013).

### 4.3.9. Percentage needs of customers met

Respondents were asked as to the percentage of customers needs that are addressed by their respective companies, 20.83% claimed about 50-75% of customers needs are met, 16.67% claimed about 75-95% of customers needs are met, while 62.5% claimed over 95% of customers needs are met (see Table 4.3). Customer satisfaction and public perception goes a long way to help keep a company strong in all areas (Morgan, 2018).

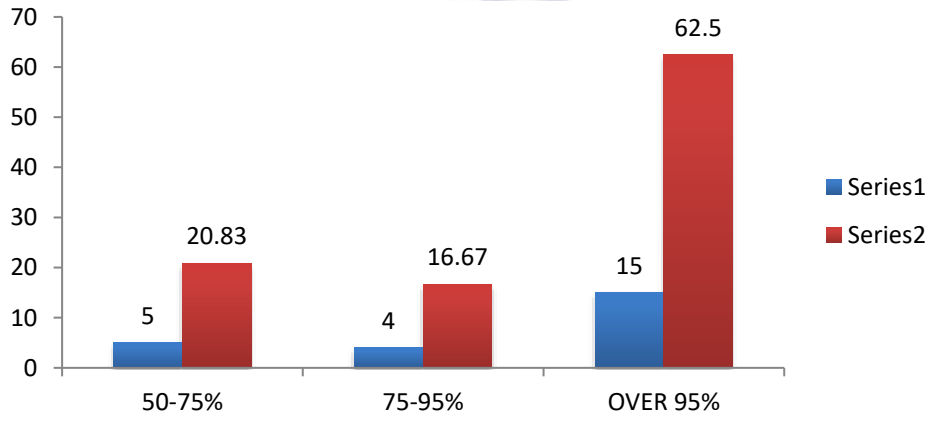


**Figure 4.11: Percentage of needs of customers met**

### 4.3.10. Customer satisfaction data used to identify customer needs

Respondents were asked which of the customers' satisfaction data they normally use to identify customers needs, 16.67% claimed they use the 'Negative feedback, another 16.67% claimed they use the 'Analysis of Competitors products, and majority of 66.67% claimed they use the 'Proactive feedback' (see Table 4.3).

### 4.3.11: Satisfaction of performance of Garment Company

Figure 4.12 shows satisfaction of performance of Garment Company

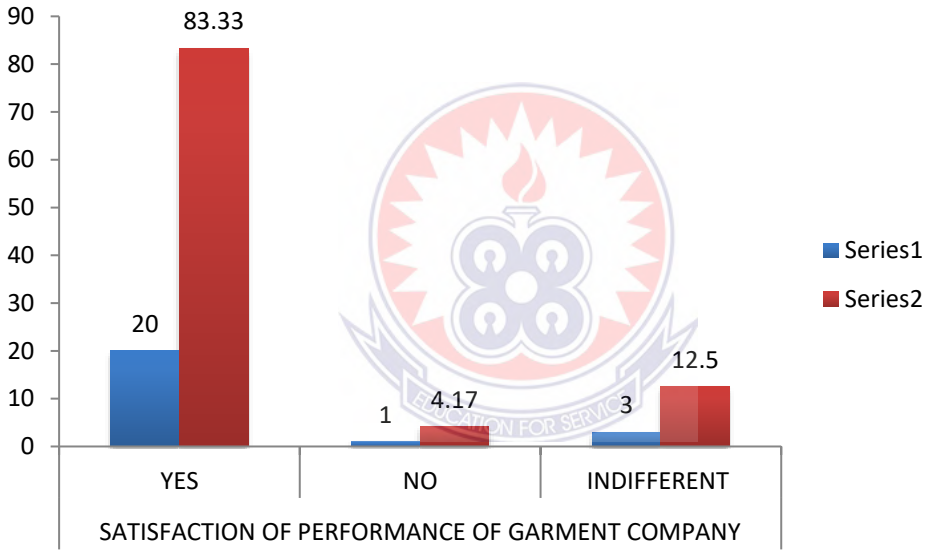


**Figure 4.12: Satisfaction of performance of Garment Company**

As to whether respondents are satisfied about the Quality control performance of their respective companies, 83.33% claimed 'Yes', 4.17% claimed that they were not by ticking 'No', while 12.5% claimed they were indifferent, that is, they were not too sure.

### 4.3.12: Quality control management practice being operated

Figure 4.13 shows quality control management practice being operated by companies

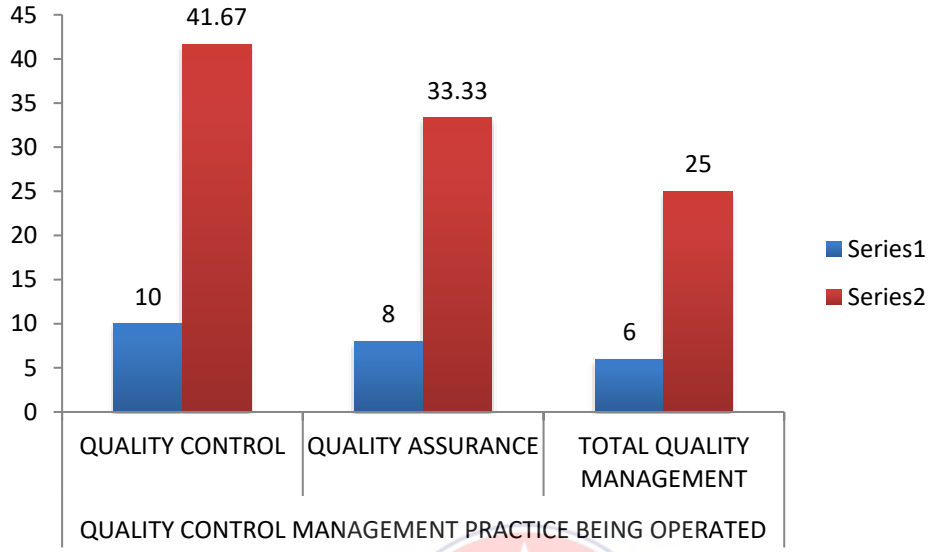


**Figure 4.13: Quality control management practice being operated**

Respondents were asked to indicate the Quality Management System, their companies were currently running, 41.67% claimed they were running Quality Control (QA), 33.33% claimed they were running Quality Assurance (QA), while 25% claimed they were running Total Quality Management (TQM)(see Table 4.3).

### 4.3.13. Control of non-conforming products or services

Table 4.4 shows control of non-conforming products or service

**Table 4.4: Control of non-conforming products or services**

| | Item | N | Min | Max | Mean Score | Rank |
|---|---|---|---|---|---|---|
| 1. | Company's resources are always to specification | 24 | 1 | 5 | 3.63 | 1 |
| 2 | Internal audits are carried out on all company's products | 24 | 1 | 5 | 3.50 | 2 |
| 3 | Company has existing required training which are available and provided | 24 | 1 | 5 | 3.29 | 3 |
| 4 | Existence of company's procedures for non-conforming products or services | 24 | 1 | 5 | 3.21 | 4 |
| 5 | Company's procedures address evaluation, segregation and disposition of all products | 24 | 1 | 5 | 3.21 | 5 |
| 6 | Company's procedures address identification of defects and documentation | 24 | 1 | 5 | 3.00 | 6 |
| 7 | Company is continuously notifying all departments concerned with handling non-conforming products and services | 24 | 1 | 5 | 2.96 | 7 |
| 8 | Methods exist in ensuring that personnel are qualified to perform specialised tasks | 24 | 1 | 5 | 2.96 | 8 |
| 9 | Company always prevent non-conforming garments from reaching customers or market | 24 | 1 | 5 | 2.75 | 9 |
| 10 | Company's personnel training needs are always identified and addressed | 24 | 1 | 5 | 2.75 | 10 |
| 11 | All training methods records are documented and maintained | 24 | 1 | 5 | 2.75 | 11 |

From Table 4.4, the scores obtained were built into ranking using the Likert scale based on opinion and not an objective measurement. However, according to Naoum (1999),

analysis could be made using factors of high and low scores and rankings of the responses.

The analysis provided some information about how respondents from the selected large-scale garmenting producing companies in the Accra Metropolis perceive the control of non-conforming products or services in their respective companies. Eleven (11) factors in all were identified, respondents were then to tick based on the Likert scale (1-5), '1' being 'strongly disagree' and '5' being 'strongly agree'.

The analysis was made based on the mean scores and the rankings with emphasis placed on factors given as low and high scores. The results and information obtained are presented on Table 4.4 above. Though each of the factors and corresponding responses were made, only the lowest and highest mean score were considered to facilitate easy analysis.

The highest ranked factor was 'Company's resources are always to specification' with a mean score of 3.63. This confirms the assertion of the 'Monitor quality controls and procedures in clothing production' (2009) document that product style or garment specifications sets out the material to be used for the garment, the size range for manufacturing, the product assembly sequence, product finishing procedures and component specifications. If this document is followed accordingly all products will conform to required specification leading to effective quality control procedures.

The lowest ranked factor was 'All training methods records are documented and maintained' with a mean score of 2.75. This confirms Mangino (2001) assertion that, employees must possess the relevant skills and knowledge to perform a particular task and this can only be attained through effective training programme. If that is not done,

not only will the company suffer but the quality of their products as well as their reputation will also suffer. Hence, through proper documentation and maintenance of training records of these companies quality will always be their watch word.

### 4.3.14: Business performance of Garment Companies

Table 4.5 indicates business performance of garment companies

**Table 4.5: Business performance of selected Garment Companies in Accra**

| FACTOR | M.S | RANKING |
|---|---|---|
| Relationship with customers is always friendly and cordial | 3.92 | 1 |
| Informal training is given to all employees to help in the execution of your business | 3.75 | 2 |
| Design and machines used for production are tested and checked before production | 3.38 | 3 |
| Defective products never gets to customers or markets | 3.29 | 4 |
| Waste materials are always minimised in the production process | 3.21 | 5 |
| Performance of your business in terms of cost of production has increased due to Quality Control | 3.17 | 6 |
| Equipment holding is enough and standard | 3.08 | 7 |
| Social responsibility to the area of operation is done regularly | 3.08 | 8 |
| All finished products conform to specifications | 2.96 | 9 |
| Process improvement are done continuously | 2.96 | 10 |
| Association with other fashion houses help in all business entities | 2.92 | 11 |
| Marketing staff are qualified and very effective | 2.88 | 12 |
| Faults are always corrected at customers' request | 2.71 | 13 |
| Quality training of Technical service work are done by in-house staff | 2.67 | 14 |
| Business growth is at par with quality of products | 2.38 | 15 |

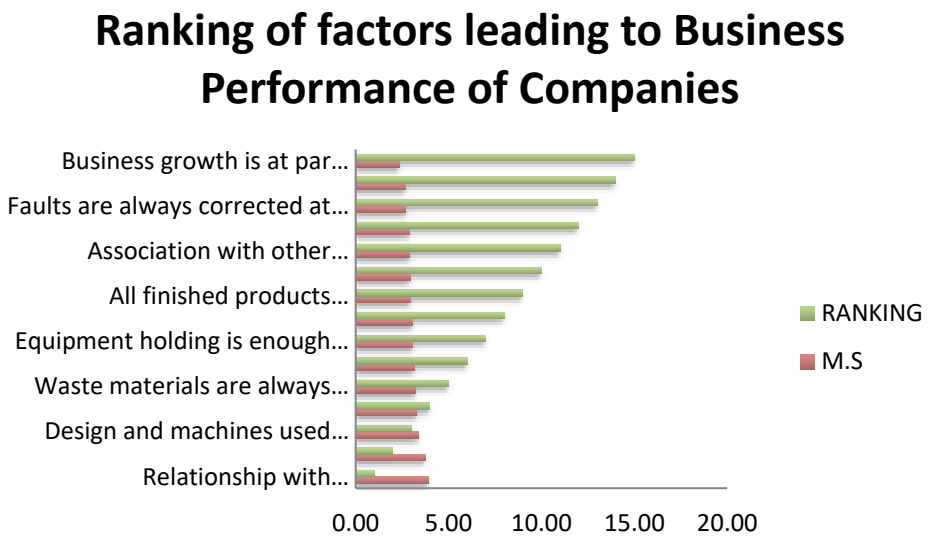


**Figure 4.14: Ranking of factors leading to Business performance of companies**

From Table 4.5, the scores obtained were built into ranking using the Likert scale based on opinion and not an objective measurement. The analysis provided some information about how respondents perceive the business performances of their respective companies.

### 4.3.15. Mitigating factors towards successful implementation of Quality control practices

Table 4.6shows mitigating factors towards successful implementation of quality control practices

**Table 4.6: Mitigating factors towards successful implementation of Quality control practices**

| Factors | M.S | RANKING |
|---|---|---|
| 1. Level of education and training of personnel is directly related to performance in quality of procedures and products of company | **3.63** | **1** |
| 2. Entrepreneurial capabilities in continuous improvement is a necessity for success of quality control procedures and products of your company | **3.25** | **2** |
| 3. Cultural beliefs, such as existence of different subcultures is responsible for quality control problems in procedures and products | **3.21** | **3** |
| 4. Lack of technological advancement is affecting the implementation of successful quality control practices | **3.13** | **4** |
| 5. Lack of shared responsibilities among departments has direct effect in company's success in quality control of products | **2.96** | **5** |
| 6. Lack of effective communication is a major contributory factor for product failures in your company | **2.88** | **6** |
| 7. Technical abilities of personnel affects final products of company | **2.75** | **7** |
| 8. Lack of employee involvement or empowerment is a contributing factor for failures in operations of quality programmes | **2.71** | **8** |

From Table 4.6, the scores obtained were built into ranking using the Likert scale based on opinion and not an objective measurement. The analysis provided some information

about how respondents perceive the mitigating factors that normally impede successful running of Quality Control practices of their respective companies.

### 4.4 Discussion of results

The findings from the questionnaire and interviews were compared to literature in order to ascertain the veracity of the findings in relation to established theory. The findings highlight the quality control management practices of some selected large-scale garment producing companies operating in the Accra Metropolis in Ghana.

#### 4.4.1 Types of customers

As to the types of customers, the selected large-scale garment producing companies in the Accra Metropolis were having, 25% of their customers were internal, that is, from within the companies, while 75% were external that is outside the companies. This result indicate that since majority (75%) of the customers were not directly associated to the company objective answers were obtained as they do not feel obliged to hide certain information required of them in the study. This is reinforces by Sailanawala (2012), who stated that in many situations, producers' have multiple customers and therefore, find it useful to identify core customers.

#### 4.4.2 Percentage of the needs of customers met

Concerning the needs of customers met, 20.83% claimed between 50-75% of their needs are met, 16.67% claimed between 75-95% of needs of customers are met, while majority (62.5%) claimed over 95% of customers needs are met. These claims can be associated

with the Question as to data used to identify customers' needs. The results were that 16.67% used the Negative feedback analysis; another 16.67% used the Analysis of competitors' products, while majority (66.67%) used the Proactive feedback method. In this method customers are asked for their opinions. This is normally done through customer surveys, focus groups, using employees as customers. The advantage in this process is that key product features are identified and the level of performance of product is assessed, (Sailanawala, 2012).

### 4.4.3 Types of defects on garments

Twelve (12) defect types were identified in literature and respondents were provided a 5-point Likert scale '1' being extremely unsatisfied to '5' extremely satisfied to tick whichever category they felt applied to garments they have bought or obtained from the selected large-scale garment producing companies in the Accra Metropolis.

The analysis was made based on the mean scores and the rankings with emphasis placed on factors given as low and high scores. The results and information obtained are presented (see Table 4.3 and figure 4.6). Though each of the defects and corresponding responses were made only the lowest and highest mean score were considered to facilitate easy analysis.

The customers ranked 'workmanship and handling defects' as the best, that they are extremely satisfied with these components of the manufacturing process. This reinforced by Islam et. al. (2013), who asserted that quality of a garment is specifically a question of customer satisfaction and that the perceived quality of a garment is the result of a number of aspects, which together helps achieve a desired level of satisfaction for the customer.

While they ranked 'fitness of garment' as the worst, showing that of the defects, the garments produced are somehow very problematic when it comes to the fitting. The design and fit of a garment affect both the protective and comfort aspects of a garment. Proper garment fit depends on the relationship between its size and the size of the customer. Garment ease can either be too large or too small. Although when it is too large, the customer experience some form of comfort and mobility it still possesses a form of lack of confidence. When it is too little, the customer feels very restricted in movement and very uncomfortable (Huck, et. al., 1997). Hence, designing to fitness would always ensure effective quality control.

### 4.4.4 Mitigating factors

The mitigating factors that normally impede the successful practices of quality control among the selected large-scale garment producing companies in the Accra Metropolis were asked.

Eight (8) factors were identified. The 5-point Likert scale of '1' being 'strongly disagree' and '5' being 'strongly agree' were used, and respondents were asked to tick how each of the eight (8) identified factors apply to their respective companies.

The analysis was made based on the mean scores and the rankings with emphasis placed on factors given as low and high scores. The results and information obtained are presented on Table 4.5 above. Though each of the factors and corresponding responses were made only the lowest and highest mean score were considered to facilitate easy analysis.

The highest ranked factor was 'Level of education and training of personnel is directly related to performance in quality of procedures and products of the company' with a mean score of 3.63. Hoonakker (2006) also confirms this by identifying teamwork, continuous improvement of personnel or employees through training on work as well as education upgrading as effective quality control indicator.

The lowest ranked factor was 'lack of employee involvement or empowerment is a major contributory factor for failures in operations of quality programmes' with a mean score of 2.71. This confirms Dimitris and Chorafas (2013) assertion that to make Quality control effective, needs and benefits should be communicated to all employees within the company. Also procedures and processes that support shared decision-making should always be present and followed. Hoonakker (2006) also confirms this by identifying teamwork, management commitment, communication, customer or client focus, employee involvement or empowerment as effective quality control indicators.

**4.4.5 Measures put in place to assure effective quality control management practice**

Respondents were provided with identified fifteen (15) factors when followed considerably would lead to effective ways to assure both customers and company alike as the smooth running of the quality control management practices.

The analysis was made based on the mean scores and the rankings with emphasis placed on factors given as low and high scores. The results and information obtained are presented (see Table 4.5 and figure 4.14). Though each of the factors and corresponding responses were made only the lowest and highest mean score were considered to facilitate easy analysis.

The highest ranked factor was 'Relationship with customers is always friendly and cordial' with a mean score of 3.92. This confirms Chand (2016) assertion that improved employer-employee relationship as well as cordial relationship with the customer leads to increased goodwill from both the company and its customers. This creates customer satisfaction leading to reduction in production cost and effective utilisation of resources.

The lowest ranked factor was 'Business growth is at par with quality of products' with a mean score of 2.38. This confirms Elsayed and Dietrich (1992) and later by Akter (2013) that companies' are now using 'quality' as a driving force or strategy to increase their participation in the current expanding global market. Product cost is being reduced as errors in processes and final products are avoided. That is, redoing of work is eliminated. They further claimed those companies who do not take quality control management practices would soon be thrown out of business.

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

This chapter shows how key objectives were satisfied and discussions on the achievement of the research objectives are provided to highlight the contributions of the research to knowledge. The research main aim was to investigate the Quality control management practices of some selected garment producing companies in the Accra Metropolis of Ghana. The aim was further broken down to three set of objectives as a way of refocusing the research and making the results specific, measurable, attainable and relevant. The chapter concludes with recommendations for further research that can be deduced based on the conclusions and limitation of the study.

## 5.1 Summary of findings

This study has dealt with the quality control management practices of garment producing companies in the Accra Metropolis. Two sets of questionnaires were administered. One set was to the garment producing large-scale companies within the Accra Metropolis. Thirty (30) questionnaires were administered, while 24 were received fully answered representing a response rate of 80%. The second set also of thirty (30) was also administered to customers of these garment producing large-scale companies. Twenty-four (24) questionnaires were also received representing a response rate of 80%.

### 5.1.1. Objective One

*To examine the perception of customers on design and construction defects of garments produced with respect to the quality control management practices of garment producing large-scale companies in the Accra Metropolis*

The perception of customers on design and construction defects of garments produced with respect to quality control management practices of garment producing large-scale companies in the Accra Metropolis were examined through the preparation of questionnaires for both internal and external customers of these companies. From the study, some customers do not always enjoy the expected form of comfort and mobility when they put on garments produced by the large-scale garment producing companies leading to lack of confidence by these customers. They also sometimes feel very restricted in movement and very uncomfortable, because their garments do not perfectly fit.

### 5.1.2 Objective Two

*To determine the existing practice of the companies as well as mitigating factors that impedes their operations*

The large-scale garment producing companies existing practice shows an ineffective teamwork, also personnel or employees are only trained on the work, upgrading of the employees for further studies is seldom done. This has resulted in some of them not being too committed. Also, communication of several operations and other procedures for effective quality control is also hardly relayed to all employees within the company. Also

procedures and processes that support shared decision-making from various departments are not effectively spelt out.

### 5.1.3 Objective Three

*To critically examine the best possible measures in assuring companies of quality in both operations and products*

From literature and from respondents, improved employer-employee relationship as well as cordial relationship with the customer leads to increased goodwill from both the companies and their customers. This creates customer satisfaction leading to reduction in production cost and effective utilisation of resources. Also, companies' are now using 'quality' as a driving force or strategy to increase their participation in the current expanding global market. Product cost is being reduced as errors in processes and final products are avoided. That is, redoing of work is eliminated. Therefore, those companies who do not take quality control management practices would soon be thrown out of business.

## 5.2 Conclusions

The main aim of the study was to investigate the Quality Control Management practices of garment producing companies in the Accra Metropolis. The outcome of this study will inform all companies in the garment producing sector as well as all prospective customers of the quality control practices of production and products of these companies.

In conclusion, from the study it was realised that, the garment producing large scale companies in the Accra Metropolis agree to the concept that quality control is defined by

the customer, and that management practices of garment producing companies are always trying their optimum best to create value to such customers. Customers were also satisfied with majority of their products. Also, quality control practice is the responsibilities of all employees and departments in the garment producing companies. Communication or information flow is also important for all garment producing companies for effective supervision and inspection. Employees' responsibilities and welfare is also paramount for these companies for effective quality control management practices.

### 5.3 Recommendations

With reference to the above conclusion and findings, the following recommendations are proposed for review and improvement.

1. The large-scale garment producing companies in the Accra Metropolis should always consider customer satisfaction as their prime focus in all their operations.
2. Garment produced should always be designed and constructed to fitness to ensure customer satisfaction.
3. These companies should always think of the professional up-grade of their employees to enable them give off their best for effective quality control management practice.
4. They should ensure effective teamwork during operations, improvement of their quality control procedures and processes as well as empowering employees in all operations.

5. They should always improve employer-employee relationship that will lead to reduction in production cost and effective utilisation of resources.
6. The large-scale garment producing companies should take quality control management seriously to enable them compete favourably in the world market.

### 5.4Limitation of the Study

The time available for the study was not enough to adequately exhaust all issues available. However, the researcher put in all effort to collect a lot of information as possible.

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# APPENDICES

## QUESTIONNAIRE FOR RESPONDENTS

UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF FASHION DESIGNING AND TEXTILE

TOPIC: **QUALITY CONTROL MANAGEMENT PRACTICES IN SELECTED LARGE SCALE FASHION COMPANIES IN THE ACCRA METROPOLIS**

This research work is purely for academic purpose and it aims at finding out the "Quality control management practices in some selected large scale fashion companies in the Accra Metropolis. Information that will be provided by respondents will be treated confidentially. I therefore entreat respondents to give me their maximum support and co-operation.

**NOTE: Please indicate your response by ticking [√] from the options or stating your respond as appropriate.**

## CUSTOMERS' RESPONSES

## SECTION A

### BACKGROUND

1. Sex A. Male [ ] B. Female [ ]

2. Age A. Below 20 [ ] B. 20-29 [ ] C.30-34 [ ] D. 35-39[ ] E. 40 and above [ ]

3. Educational status of respondents A. O' Level [ ] B. A' Level [ ] C. SSSCE [ ]

D. 1st Degree [ ] E. 2nd Degree [ ] F. Others specify……

4. What is your profession? ……..

5. Type of customer A. Internal [ ] B. External [ ]

6. Where do you normally acquire your garments for outings?

A. Small -scaled dressmaker [ ] B. Medium -scaled dressmaker [ ] C. Large-scale garment company [ ]

7. What percentage of garments do you usually have to alter before usage?

A. None [ ] B. Up to 25% [ ] C. Up to 50% [ ] D. Up to 100%

8. What is the time frame in which you have been a customer to this company?

A. Less than a year [ ] B. 1-5 years [ ] C. 6-10 years [ ] D. Over 10 years

9. Are you satisfied with the performance of your garment company?

A. Yes [ ] B. No [ ] C. Undecided

## SECTION B

**Defects in design and construction of garments**

Under each of the following, rate each type of defect according to how they impact negatively or positively towards the quality of garment produced by large scaled fashion companies in the Accra Metropolis.

Extremely Unsatisfied (1); Mostly Unsatisfied (2); Satisfied (3); Mostly Satisfied (4); extremely satisfied 5)

| Questions | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. Fabric defect | | | | | |
| 2. Workmanship and handling defects | | | | | |
| 3. Seam formation | | | | | |
| 4. Sewing defect | | | | | |
| 5. Finishing defect | | | | | |
| 6. Critical defect | | | | | |
| 7. Major defect | | | | | |
| 8. Minor defect | | | | | |
| 9. Colour combination | | | | | |
| 10. Shape of garment | | | | | |
| 11. Line effect of garment | | | | | |
| 12. Fitness of garment | | | | | |

**THANK YOU FOR YOUR C-OPERAOTION**

**QUESTIONNAIRE FOR RESPONDENTS**

UNIVERSITY OF EDUCATION, WINNEBA

DEPARTMENT OF FASHION DESIGNING AND TEXTILE

TOPIC: **QUALITY CONTROL MANAGEMENT PRACTICES IN SELECTED LARGE SCALE FASHION COMPANIES IN THE ACCRA METROPOLIS**

This research work is purely for academic purpose and it aims at finding out the "Quality control management practices in some selected large scale fashion companies in the Accra Metropolis. Information that will be provided by respondents will be treated confidentially. I therefore entreat respondents to give me their maximum support and co-operation.

**NOTE: Please indicate your response by ticking [√] from the options or stating your respond as appropriate.**

**A. LARGE SCALE FASHION COMPANIES**

i. Gender of Respondents A. Male [ ] B. Female [ ]

ii. Number of years since Company was established A. Below 2 years [ ] B. 2-5 [ ] C.6-10 [ ] D. Over 10 years [ ]

iii. Age of respondent A. Below 20 [ ] B. 20-29 [ ] C.30-34 [ ] D. 35-39[ ] E. 40 and above [ ]

iv. 3. Educational status of respondents A. O' Level [ ] B. A' Level [ ] C. SSSCE [ ] D. 1st Degree [ ] E. 2nd Degree [ ] F. Others specify……

v. What is your managerial position in company? .....

vi. Where do you market your products?.....

vii. Are you aware of that Quality control practices are implemented in your company? A. Yes [ ] B. No [ ] C. Indifferent [ ]

viii. What percentage of the needs of customers is met? A.50-75% [ ] B. 75-95% [ ] C. Over 95%[ ]

ix. Which method do you use to undertake customer satisfaction data to identify customer needs?

A. Negative Feedback Analysis [ ] B. Proactive Feedback [ ] C. Analysis of competitors' product

x. Are you satisfied with the quality control management practices of your company? A. Yes [ ] B. No [ ] C. Indifferent [ ]

xi. Which type of quality management system does your company practice? A. Quality control [ ] B. Quality assurance [ ] C. Total quality management [ ]

**B. CONTROL OF NON-CONFORMING PRODUCTS OR SERVICES**

Under each of the following, rate each type of factor according to how they impact negatively or positively towards the quality of garment produced by large scaled fashion companies in the Accra Metropolis.

Strongly disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly agree 5)

| **Factors**<br><br>**General** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| 1. Internal audits are carried out on all products of company | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 2. Company resources are always to required specifications | | | | | |
| 3. Existence of company's procedures for non-conforming products or services | | | | | |
| 4. Company always prevents non-conforming garments from reaching customers or markets | | | | | |
| 5 Company procedures address identification of defects and documentations | | | | | |
| 6. Company procedures address evaluation, segregation and disposition of all products | | | | | |
| 7. Company is continuously notifying all departments concerned in handling non-conforming products and services | | | | | |
| **Training** | | | | | |
| 8. Company's personnel training needs are always identified and addressed | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 9. Methods exist in ensuring that personnel are qualified to perform specialized tasks | | | | | |
| 10 Company has existing required training which are available and provided | | | | | |
| 11. All training methods records are documented and maintained | | | | | |

**C. BUSINESS PERFORMANCE**

Under each of the following, rate each type of factor according to how they impact negatively or positively towards the quality of garment produced by large scaled fashion companies in the Accra Metropolis.

Strongly disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly agree 5)

| **Factors** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| 1. Performance of your business in terms of cost of production has increased due to Quality Control | | | | | |
| **Quality of Final Products**<br>2. All finished products conform to specifications | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Technology** | | | | | |
| 3. Equipment holding is enough and standard | | | | | |
| 4. Informal training is given to all employees to help in the execution of your business | | | | | |
| **Micro Environment** | | | | | |
| 5. Business growth is at par with quality of products | | | | | |
| 6. Relationship with customers is always friendly and cordial | | | | | |
| 7. Social responsibility to the area of operation is done regularly | | | | | |
| 8. Marketing staff are qualified and very effective | | | | | |
| 9. Association with other fashion houses help in all business entities | | | | | |
| 10. Waste materials are always minimised in the production process | | | | | |
| 11. Faults are always corrected at customers' request | | | | | |
| 12. Design and machines used for production are tested and checked before production | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 13. Quality training of Technical service work are done by in-house staff | | | | | |
| 14. Process improvement are done continuously | | | | | |
| 15. Defective products never gets to customers or markets | | | | | |

**D. MITIGATING FACTORS**

Under each of the following, rate each type of factor according to how they impact negatively or positively towards the quality of garment produced by large scaled fashion companies in the Accra Metropolis.

Strongly disagree (1); Disagree (2); Neutral (3); Agree (4); Strongly agree 5)

| **Factors** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| 1. Level of education and training of personnel is directly related to performance in quality of procedures and products of company | | | | | |
| 2. Entrepreneurial capabilities in continuous improvement is a necessity for success of quality control procedures and products of your company | | | | | |
| 3. Cultural beliefs, such as existence of different subcultures is responsible for quality control problems in procedures and | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| products | | | | | |
| 4. Lack of technological advancement is affecting the implementation of successful quality control practices | | | | | |
| 5. Lack of shared responsibilities among departments has direct effect in company's success in quality control of products | | | | | |
| 6. Lack of effective communication is a major contributory factor for product failures in your company | | | | | |
| 7. Technical abilities of personnel affects final products of company | | | | | |
| 8. Lack of employee involvement or empowerment is a contributing factor for failures in operations of quality programmes | | | | | |