

UNIVERSITY OF CAPE COAST

BODY MEASUREMENT PRACTICES AND GARMENT FIT AMONG
MALE GARMENT PRODUCERS IN TAMALE METROPOLIS

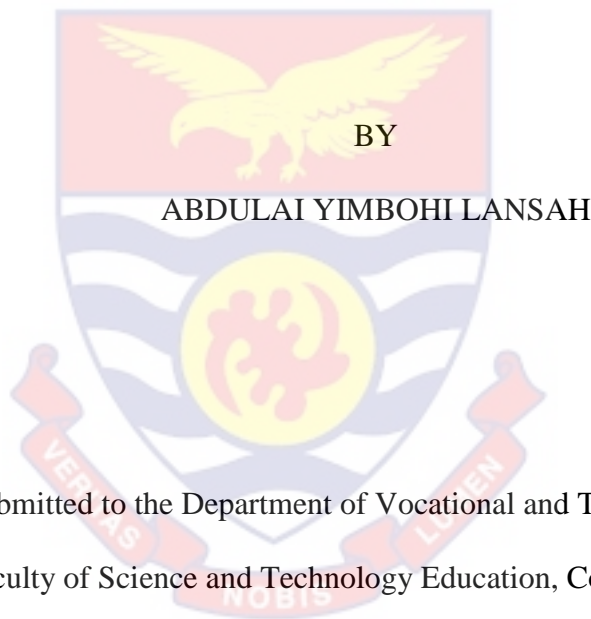


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2022

UNIVERSITY OF CAPE COAST

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MALE GARMENT PRODUCERS IN TAMALE METROPOLIS



Thesis submitted to the Department of Vocational and Technical Education of
the Faculty of Science and Technology Education, College of Education
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the award of Master of Philosophy degree in Home Economics Education

MAY 2022

DECLARATION

Candidate's Declaration

I hereby certify that this thesis is the outcome of my own original study and that no part of it has ever been submitted for another degree at this university or anywhere else.

Candidate's Signature: Date:

Name:

Supervisor's Declaration

I hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of the thesis laid down by the University of Cape Coast.

Supervisor's Signature: Date:

Name: Prof. Modesta Efua Gavor

ABSTRACT

The study examined the techniques of body measurement taking and its use by tailors to cut out and sew a shirt and a trouser and how these techniques affect the final fit of the garment. This study employed a qualitative research methodology. Data was acquired from five selected tailors using a method of purposive sampling. Data collection equipment included a designed observation checklist, a semi-structured interview guide, and an evaluation index for fit. Using statistics such as percentage and frequency, mean and standard deviation, along with thematic analysis, the acquired data was analyzed. According to the findings of the study, tailors omitted most measurement that were needed to achieve garments with a good fit. The investigation revealed that the tailors guessed ease to be added clothing production, which negatively affected the garments fit. Moreover, the tailors did not consistently identify the relevant body parts during body measurement. Through the study, it was observed that the tailor's capacity to form armholes and the shaping from the knee to the bottom of the trouser were the most difficult challenges encountered during garment manufacturing. The results show that all the tailors could not take all measurement and most of the measurements were not taken properly. This could be due to the wrong techniques passed down from master craftsmen to their apprentices. It is therefore recommended that measurement taking in custom sewing in the informal sector be looked into and the procedures improved.

KEY WORDS

Custom-made clothing

Seam allowance

Ease

Garment fit

Close-fitting garment

Loosely fitted garment

Fitted garment

Live model

Fit evaluation

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DEDICATION

To my family.

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LIST OF ACRONYMS

GNTDA	Ghana National Tailors and Dressmakers Association
GSS	Ghana Statistical Service
TVETS	Technical and Vocational Education and Training Support
3D	3-Dimensional
CAD	Computer-Aided Design systems

CHAPTER ONE

INTRODUCTION

Background to the Study

Clothing is one of humanity's most fundamental needs. Clothing is a uniquely human trait that is present in almost all human communities. Covering one's nakedness, warmth, safety, and modesty, as well as expressing cultural and social meaning and displaying clothing's aesthetic values, determine the amount and type of clothes worn. Koranteng (2015) defines clothing as a collection of items worn by cultures, and people constantly assess the social worth and status of others depending on what they are wearing. This indicates that clothes are an integral component of the human body and that a person initiates nonverbal communication with the rest of the world through clothing. Clothing expresses and depicts an individual's inner world, through which a great deal of meaning and messages are delivered (Dorrance, 2011).

Different body measurements are the reason for different sizes of clothing available in retail stores. The body measurements are one way of describing a body; this description is then interpreted to create well-fitted garments (Bye, Labat & Delong 2006). The measurements can be taken manually with a tape measure (Liechty, Rasband & Pottberg-Steineckert 2010) and preferably with identified marks on the body (Hernández 2018), or with the help of some equipment, for example, a body scanner (Daanen & Ter Haar 2013). To get accurate measures, the measurement should be taken by someone else (Hernández 2018), preferably a trained expert.

Body measuring standards in the garment business, according to Gupta and Zakaria (2014), are based on anthropometric data size charts, which are used throughout the design and manufacturing process. For a garment to fit well, it must collect the essential and precise anthropometric data. According to Spahiu, Shehi, and Piperi (2015), the major concerns associated with ill-fitting garments obtained in the apparel sector are due to a lack of updated anthropometric data. Anthropometric measures, according to Bari, Salleh, Suleiman, and Othman (2015), are used in the clothing industry to create a precise representation of the human shape when measuring and creating clothes to fit the body.

Garment production has gone through various stages of development, making the textile and apparel industry one of the largest in the global marketplace when the many components of the supply chain involved with transforming raw materials into products and bringing products to the final consumer are taken into account. Fibers, yarns, fabrics, clothing and accessories for men, women, and children, as well as home furnishings and soft textile goods, are all included in the textile and clothing industry supply chain (Ruppert-Stroescu 2009).

Ready-to-wear or mass-produced garments can be purchased in stores, while tailor-made garments can be custom-made. Tamale is not an option for any of the garments created in Ghanaian tailor shops because they are all custom tailored to the customer's needs. According to Holusha (1996), several researchers have proven that purchasing a ready-made garment (ready-to-wear) costs a lot in maintaining the garment, whereas a custom-made garment costs less because considerable attention is taken in sewing the garment to

match the needs of the buyer. When a tailor sews a shirt or a trouser for a customer using the customer's body measurements, patterns, and it fits nicely, it gives the tailor delight and bravery to be productive. As a result, a garment must be fashioned and made to fit the three-dimensional shape of the human body, as well as fulfill beauty, quality, and wearability standards (Fischer, 2009).

Making or altering to individual or personal requirements is what customizing means in the traditional sense. It's a marketing strategy that allows customers to create products or services based on their own preferences. The term was driven from the word client. To personalize means to give anything personal or unique qualities or characteristics, such as a person's initials, name, or other identifying information. Personalization can also be thought of as a type of customisation (Kusnezov, 2012). A custom-made shirt or trouser irrespective of where it is made must be well constructed to achieve its desired goal that is; serviceability and provide the client with value for money. Unlike ready-to-wear clothing, custom-made clothes are often produced in factories that make vast quantities of items at a time. Rolls of cloth are cut into pattern pieces, which are then sewed together in an assembly line way to construct outfits (Gupta & Eremenko, 2014).

When shirt or trouser is manufactured according to the customer's specifications and measurements, it fits the consumer's preferences. Custom tailoring often entails taking measurements, allowing the buyer to select style, fabric, and fit preferences, making the item, and sometimes modifying the fit at one or more fittings. The resulting garment has a fit and style that is individualized to the customer's tastes, but it is often expensive due to the

considerable amount of physical labor necessary in the garment's preparation and the amount of time required on the customer's part. Customised garments are also known as made-to-measure garments and made-from-scratch garments (Harrop, 2010). These garments are tailored to specific persons and are measured, cut, created, and fitted (Brown & Rice, 2014). People with larger, lighter, tall, short, and asymmetric body proportions all benefit from this (Makopo, 2014). As a result, custom-made clothing can provide a better fit and unique style than mass-produced items (Peterson & Gordon, 2001).

A tailor is a skilled tradesperson who manufactures, repairs, or modifies clothing, notably suits and men's clothing. The process of designing, cutting, fitting, and completing garments is known as tailoring. According to David (2020), the word tailor comes from the French word *tailleur*, which means "to cut," and first appeared in English in the fourteenth century. 'Sartor,' which means patcher or mender in Latin, was the Latin name for tailor and gave origin to the English word "sartorial," which means "connected to tailoring, or tailored clothing." David (2020) went on to explain that bespoke or custom tailoring refers to products that are made to order for a specific client. Tailoring as a profession date back to the early Middle Ages, when guilds of tailors were formed in major European towns. Men were first dressed with cushioned linen underwear to protect them from the chafing of chain mail and then plate armour. At the time, men's clothing consisted of a loose-fitting tunic and hose (David, 2020). However, in Ghana the word tailor is used for males who do custom sewing and not necessarily sew jackets or tailored garments. Tailors in Ghana refer to males who sew male garments especially.

Tailors in Ghana work from home or run a small company, and their clothing designs are heavily influenced by current designs seen in magazines or stores, as well as standard patterns created as part of a client-tailor agreement. Tailors, according to Hamon (2007), are trend followers rather than creative or design innovators, and they employ their own manner of manufacturing garments to accomplish the desired design. To create a garment, the tailor can use paper patterns generated by manual drawing, electronic patterns obtained using Computer-Aided Design systems (CAD), or direct plotting on cloth (freehand cutting). According to Forster and Ampong (2012), a designer's approach is determined by the quantity of information, abilities, and competencies learned during training.

Apart from ready-to-wear garments, many types of garments worn of late are usually made from free-hand cutting. The majority of Ghanaian small garment makers employ free hand cutting rather than pattern design, which is more costly and needs some technical knowledge. According to Foster and Ampong (2012), little documentation of free-hand cutting has been done. Free-hand cutting, according to Shailong and Igbo (2009), is a method of cutting fabric that involves drawing a measurement with chalk and cutting it without the need of a paper pattern. In free-hand cutting, the individual's measurements are written directly on the fabric. Most Ghanaian tailors utilize freehand cutting since they are apprentices who study their craft under the guidance of an experienced master, and hence stick to their master's manufacturing technique, which may be only freehand cutting.

However, those who learned their craft in a formal academic setting where paper patterns were employed in training of students acquire and use

the requisite skill in pattern making. Patterns are commonly constructed of paper, but they can also be created of more durable materials like paperboard or card-board (Aldrich, 2008). This knowledge comes from the mid-nineteenth century, and as the industry progressed, so did the fundamental drafting concepts and techniques. The implementation of TVETS projects (Technical and Vocational Education and Training Support) in education and training in fashion has seen some improvements as it is presently taught at Ghana's postsecondary institutions. The project has enabled graduates to obtain high-demand, marketable and employable skills that will enable them to work and be economically productive in the fashion industry.

Matters relating to quality fit are of paramount importance in all garments with men's shirts and trousers not being an exception. To be profitable, garment producers must produce high-quality apparel (Pritchard, 2013), which must fit perfectly, seams must withstand care during use, and fit must be ensured appropriately to serve the need of the client. As a result, all cutting and construction processes used by tailors must emphasize the utilization of body measurements for a perfect fit.

Statement of the Problem

In the context of globalization, where consumers increasingly desire unique and custom-made apparel, the accuracy and application of body measurements are critical for garment fit. However, in Ghana's local garment industry, traditional sewing techniques, often passed down through generations, remain predominant despite the availability of advanced technologies (Quartey, 2006). Many tailors in the Tamale Metropolis rely on

the free-hand cutting method and individual measurements, largely learned through apprenticeship, rather than formal training.

While custom-made garments should ideally combine both aesthetic appeal and functional fit, the reality is that poor fit often limits the usability of these garments. Asare (2019) highlights that the majority of tailors and dressmakers in Ghana are apprenticeship-trained, a system where skills are transferred directly from master craftsmen to apprentices. This method, while practical, may perpetuate outdated techniques and workmanship deficiencies, especially if the master's skills are not critically evaluated or updated.

There is growing dissatisfaction among customers regarding the fit of garments produced by informal tailors, particularly those trained through apprenticeships (Wallace & Choi, 2011, cited in Bakker-Edoh, 2018; Dove, 2016). This dissatisfaction is exacerbated by the limited use of pattern drafting in the informal sector, where free-hand cutting is preferred due to its simplicity and cost-effectiveness (Foster & Ampong, 2012). However, free-hand cutting often compromises the precision needed for well-fitting garments, which can lead to poorly constructed clothing that negatively impacts the wearer's appearance and confidence.

Given that a well-fitted garment is essential not only for aesthetic reasons but also for comfort and durability, it is crucial to examine the measurement techniques employed by tailors in the Tamale Metropolis. Preliminary observations suggest that many local designers use rudimentary methods, such as chalk or pencil markings directly on fabric, based on body measurements—a process prone to inaccuracies. Therefore, this study seeks to investigate the proficiency of these tailors in taking accurate body

measurements, their application in garment construction, and the resultant fit of the garments produced. This will help identify gaps in current practices and provide insights for improving garment fit in the local tailoring industry.

Purpose of the Study

The study evaluates body measuring practices and garment fit among male garment producers in Tamale.

Objectives of the Study

1. Assess body measurement-taking procedures of tailors in Tamale Metropolis.
2. Evaluate the application of body measurements taken in garment cutting and construction.
3. Determine the fit of garments produced by tailors in Tamale Metropolis.
4. Investigate fit problems with garments produced by tailors.

Research Questions

1. How do tailors in Tamale take body measurements of their clients?
2. How do tailors apply body measurements in cutting out and constructing male garments?
3. How well does the custom-made garment produced by tailors fit consumers?
4. What are the problems identified with the fit of garments in produced by participants question three?

Significance of the Study

The research will highlight the difficulties and constraints in applying these body measurements to produce fitting shirt and trouser for men. The

outcome would help develop the local fashion industry in Tamale for sustainable global competition and eventually make vital contributions to economic transformation in Ghana by outlining production techniques needed in taking body measurement and how to use them for garment construction. Finally, the study would serve as a source of information for academic scholars, policymakers and entrepreneurs in the garment industry in Tamale on body measurement taking as well as construction details of a shirt and trouser.

Delimitation

The study is delimited to only male tailors who produce custom made garments in the Tamale Metropolis. In terms of content, the study is delimited to body measurement procedures and its application in sewing fitting shirt and trousers for men. For this study, the physical fit of one shirt and trouser close-fitting garment design for males is used to assess customer satisfaction with the garment. The study is delimited to small garment enterprises within the Tamale Metropolis in the Northern region of Ghana National Dressmakers and Tailors Association members

Limitation

Despite the fact that the methodology employed for the research was appropriate, its application imposed certain constraints on the study. The time-consuming nature of the data collection procedure represented was the major limitation encountered. These are observations made during the garment's cutting and stitching processes. To ensure that the processes involved in garment production did not influence the outcome of the study, the researcher requested that each tailor produce the garments within two weeks, but did not

limit the tailors' cutting and stitching time. Due to the fact that each tailor worked at his own tempo, the cutting and sewing process was time-consuming. Furthermore, the interview was extensive and time-consuming. In addition, both the live model and the expert judges became fatigued during the fit evaluation. This may impact their evaluation of a few of the garments.

Definition of Terms

Custom-made clothing: Clothing made to individual specifications.

Seam allowance: The space between the fabric edge and the stitching line on two (or more) pieces of fabric that are being sewed together.

Ease: The additional space a garment provides beyond the wearer's body measurements.

Garment fit: The relationship between the human body, the garment's dimensions, and its shape.

Close-fitting garment: A garment that conforms closely to the body's contours.

Loosely fitted garment: A garment that do not closely conform to the body's contours.

Fitted garment: A garment that closely matches the contours or shape of the body part being covered.

Landmarks: They are anatomical points of interest on the human body that are used to develop garment layouts.

A live model: A person or model whose job it is to present clothing designs to judges during a fashion show so they may assess how well they fit.

Fit evaluation: The process of evaluating the fit of a garment on a live model.

Organization of the Study

The research is organized into five chapters. The first chapter is the Introduction. This chapter contains the study's purpose, problem statement, objectives, significance of the study, and study constraints, as well as definitions of essential terms. The second chapter is a review of the literature. The third chapter, methodology, discusses the methods utilized in the study as well as data collection from the demographic of interest. The fourth chapter is results and discussion, which focuses on the analysis and discussion of the study's findings. The fifth chapter contains the summary, conclusions, and suggestions. This chapter summarizes the study, discusses the study's conclusions and consequences, and makes recommendations for further research.

CHAPTER TWO

LITERATURE REVIEW

This study aims to investigate the effect of body measurements on garment fit among Ghanaian tailors in the Tamale Metropolitan District. This chapter examines relevant literature regarding body measurement, the concept of garment fit, and the conceptual framework of the study. The review is conducted according to the following subheadings.

An overview of the garment industry

The garment business developed to incorporate high-quality, fashion-forward ready-to-wear products in the 1990s, after the early adoption of coarsely made ready-to-wear clothing in the 1800s (Asare 2019). The garment sector has always been known for its low entry barriers, and it continues to be so today. With a minimal quantity of simple equipment, little financial investment, and somewhat unskilled but trainable labour, viable clothing manufacturing businesses can be established, as seen in Ghana today. This ease of entrance may explain why small businesses (those with less than 50 employees) account for roughly 80% of the garment industry (US Census Bureau, 1995) cited in (Asare 2019).

The amount of human intervention in creating garments has decreased significantly due to technological innovations. However, the majority of the gains have been accomplished in textile manufacturing. The amount of physical labour necessary to turn two-dimensional cloth into a three-dimensional body product has limited advancements in the apparel business (Dickerson, 1999). Large garment companies that have invested in specialised equipment that conducts automated operations that replace manual repetitive

procedures (e.g., button-hole makers, blind hem machines, hemming machines) have reaped the greatest benefits from technological advancements (Asare 2019). They've used automation or mass production methods for things like jeans, men's business shirts, and T-shirts, which are often ordered in big quantities, require little flexibility, and have long lead times. Offshore production allows these garment companies to benefit from economies of scale and lower labour costs. Small garment producers in Ghana rarely have substantial orders that justify purchasing expensive specialised equipment or transferring overhead costs to off-shore operations (Asare 2019).

Women, men, and boys' apparel, children's and miscellaneous apparel, including accessories, are the four key markets in the apparel industry. Based on the overall number of companies, each market accounts for roughly 68 percent, 17 percent, 10 percent, and 5 percent of the total (US Census Bureau, 1995) in (Asare 2019). Small garment producers in Ghana are particularly concentrated in the men and women's clothing business, characterised by quick change, distinct designs, various product lines, and high fashion.

According to Christerson and Appelbaum (1995), the small garment producer products are diverse and subject to frequent stylistic changes. When looking at the shift in proportions, the market for miscellaneous garments and accessories grows for companies with fewer than 50 employees. These things are frequently small and or bespoke products (e.g., bags, caps, belts) that require human manipulation and are regarded to have rapid style changes. The disparities in the concentration of enterprises within the industry between small garment producers and big apparel manufacturers may indicate other differences between these two groups. Small garment producers are frequently

located near the market for which they serve, homes and conners of convenience to the producer (Asare, 2019).

Conceptual Review

The Concept of Garment Fit

Fit refers to the conformity of a clothing to the body or its interaction with the body. Apparel fit has long piqued researchers' interest because it is regarded as a critical component of client happiness and garment quality (Song & Ashdown, 2010). As a result of the diverse qualities of clothing, a number of scholars have characterized garment fit in numerous dimensions (Outling, 2007). Fit is usually regarded as one of the most significant measurement of clothing quality, which refers to how a garment hugs the body or the interaction between the body and the garment (Brown & Rice, 2014). According to Chen (2007), the fit of a garment refers to the correlation between a body measurement, a garment, and a body contour. Given the variety of clothing styles, it is challenging to give a broad definition of what constitutes a good fit. Yu (2004) claims that current fit trends, established industry standards like garment styles or functionalities, and individual fit preferences all have an impact on what a well-fitting garment means and, subsequently, what exceptional fit means in custom-made apparel.

Good-fitting clothing provides space for mobility, is comfortable to wear, and allows for flexibility of movement. As noted in Stamper et al. (2005), it does not wrinkle, is not baggy, and is elegant and pleasing to the eye (Nkambule 2010). The fit characteristics of these garments appeal to and inspire confidence in oneself and support self-esteem and worth in the individual (Marshall et al., 2004). Fitted clothing tends to satisfy the utilitarian

and emotional needs of the consumer while also being aesthetically beautiful. A perfectly fitting garment hangs nicely, is wrinkle-free, has a nice fit and lies comfortably over the body's curves. In practice, a subjective assessment of a garment's fit can only be determined when the garment is being worn. Men can only know if their shirts and pants fit well after they have worn them. This is due to the fact that the influence of all aspects of the shirt and pants, it is only possible to evaluate a garment's qualities, such as comfort and peer opinion, after it has been worn.

How a piece of clothing fits tends to appeal to a person's sense of style and give them confidence. It also helps a person feel good about themselves (Marshall, et al., 2004). Fit can also refer to how well a garment fits the body (Workman & Lentz, 2000) or how well the garment and body function together (Song & Ashdown, 2010). So, clothes that fit well should hide the wearer's flaws, look good on the body, and have just right proportions (Tate, 2004). So, a good fit should come from a garment that is the right size and has the right measurements for your body. In addition, various definitions of "excellent fit" have been proposed based on cultural perspectives, industry sizing norms, and fashion trends. This is because the way clothing fits is a complicated phenomenon that depends on many different aspects, including fashion and style. (Fan, Yu & Hunter, 2004). On the other hand, good-fitting clothes should drape over the body without clinging, pulling, binding, or twisting. In addition, they should emphasize the most alluring features of the body (Rasband & Liechty, 2006). On the other side, poorly fitting clothing often causes the wearer's imperfections to be highlighted because it is so easy

for it to gape, wrinkle, and crease. This could make the person feel uneasy and uncomfortable in every way (Rasband & Liechty, 2006).

Fit is one of the most important things people think about when buying clothes or letting their dressmakers or tailors make clothes for them. Anikweze (2013) and Dove (2016) both said that how a piece of clothing looks on the outside is how it fits. When clothing is made for a client, one of the first things they think about is how it fits. This is also the first time a client has complained, and this is the first area to reject clothing (Dove 2016). Anikweze wrote in 2013 that a dress that fits right gives the person who wears it a sense of confidence and physical comfort. According to Anikweze (2013), well-fitting clothing should not simply enhance the wearer's appearance but should also be comfortable when the person is standing, sitting, walking, bending, or moving.

For the fit to work, there needs to be enough room for movement when the pattern is cut out. This is done by taking the measurements of each body. This will make the clothes look better and make them easier to wear. Fit is the most important part of fashion. As styles change, it is important to make sure that new clothes are made to fit the changing shapes of clients' bodies by using their measurements. People who buy custom-made clothes are always picky about how the clothes fit, and they are even willing to pay more for trendy clothes that fit well. Li's research (which was reported in Swinker and Hines, 2006) revealed that there was a high demand for stylish, well-fitting clothing.

A well-fitting clothing must possess all the characteristics or qualities of a good fit in order to be attractive and acceptable (Stamper, Sharp & Donnell, 2005). Understanding these factors will help consumers and tailors

deal with how a garment fits, resulting in clients being satisfied with their custom-made clothing. Additionally, the comfort of the garment is assessed using tactile and visual clues, which may affect how the wearer feels about how well it fits. (Das & Alagirusamy, 2010). Comfort in terms of garment fits depends on a number of factors, such as how it feels on your body. This includes the garment's mechanical properties, such as how it moves and how heavy it is. Psychological comfort consists of positive emotions and a sense of well-being when wearing the item, such as femininity or refinement. Social comfort includes things like whether the garment is right for the occasion or whether the wearer is happy with how others see them (Harrow & Greenwood, 2005).

The above statements show that fit is a problem for most people who buy clothes around the world, and it can also be a problem for people who buy custom-made clothes in Ghana. If you want to solve fit problems, you need to know what makes a good fit. Stamper et al. (2005) as cited in (Nkambule 2010), assert that clothing should be ideally tailored based on fit factors such garment ease, fabric grain, line, set, and balance. A good fit in a garment can also be determined by style, body type or proportions, the garment's size, and the buyer's familiarity with size labels.

Elements Employed to Evaluate Fit in clothing

Nkambule (2010) cited Stamper et al. (1991) that, the components that make a garment fit effectively collectively are referred to as the factors of fit. These components aid in understanding the notion of fit as well as how to identify fit difficulties in custom clothing and find remedies. These components include the fabric's grain, ease, line, balance, and set.

Fabric grain

The way a garment looks depends on the fabric grain. The garment's appearance and fit will depend on the fabric selected. The fabric's most functional and aesthetically pleasing qualities are displayed by the way it was cut and put together (Brown & Rice, 2014). According to Rasband (2002), the fabric should be of high quality, have a weave that holds together, have the yarn run parallel to the grain and at right angles for good drape, be strong to sustain the body form, and be aesthetically beautiful for a better feel, to be admired, and to facilitate washing. The grain of the fabric determines how it hangs and drapes on the body. A piece of clothing that fits well and looks good is made from fabric with a balanced grain.

During the design process, the person making the product has to choose the right fabric that fits the has good drape, style, and fit. To prevent the fabric's grain from becoming messed up, the fabric should be cut exactly on the grain. The clothing will fit nicely if the fabric's grain is well-aligned with the body, have a good drape, be comfortable, and looks good (Stamper et al., 1991) cited in (Nkambule, 2010). When clothing is cut and sewed off grain, it does not fit properly and hangs crookedly. The individual appears unattractive in the pulled, puckered, twisted, saggy, or loose garment and shows that the clothing does not fit well and is not of good quality (Rasband & Liechty, 2006). The content of the fabric is very important to people who buy clothes. People who buy clothes want fabric that looks nice and feels good against their skin. Tweed and other textured textiles that can conceal body defects are typically preferred by plus-size clients. Additionally, stretchy blends are ok as long as they don't cling to the body (Lee, 2005).

Line

A line is a crucial component of the fit, according to Stamper et al. (1991), which was quoted by Nkambule (2010). A line is present in custom-made clothing and is composed of seams, fabric grain, darts, hems, tucks, and pleats. Lines in clothing have the tendency to make the wearer appear shorter, taller, heavier, or thinner. If the lines are straight and follow the contours of the body, the garment can achieve its desired appearance and fit. Clothing's appearance and fit on the body are strongly influenced by style lines, their size, and where they are placed on the fabric. When someone has upward and downward lines, they typically appear taller and thinner. When clothes do not fit right, they can have tight or loose lines going up and down, across, and diagonally. Wrinkles from clothes that do not fit well are hard to iron out. Body size and shape help make sure that lines are straight (Rasband & Liechty, 2006).

Garment Set

The smoothness of a garment's finish is what is meant by "garment set." When the clothes are on the body, a garment set does not have any unattractive wrinkles across, down, or diagonally. If a garment has wrinkles, it might not fit right. A garment with horizontal lines means it is too tight above or below the bulges. When a garment has vertical wrinkles, it means it is too big. When there are diagonal lines on your skin, it means that your shoulders or hips are getting bigger. All of these are signs of a bad fit (Marshal et al., 2004). It is not easy to iron out wrinkles in clothes. A garment with loose vertical wrinkles means it is too big around the body. When the fabric sags, it makes these lines. If the garment has loose horizontal wrinkles, it means it is

too long. When too little fabric is used, it pulls on the fabric and makes it tight. The way a well-made garment is set depends on its grain, balance, line, and ease. A garment will have a smooth finish and a great set if it fits the body well without being excessively tight (Stamper et al., 1991), as stated in (Nkambule, 2010).

Balance

Rasband and Liechty (2006) define balance as "when a clothing fits the body symmetrically." A design is well-balanced when it seems that the garments can sustain the body's weight. When a garment is proportionate, its pieces are roughly the same size. One space or region is out of proportion when it is much larger than another. There is good balance when design elements are in harmony in terms of mood and occasion. When clothing does not fit properly, it moves or sags, creating an asymmetrical appearance (Rasband, 2002). All of these fit-related characteristics enhance the garment's overall appearance. Because these components define the final appearance of the garment, improper application of any of them is likely to result in fit issues.

According to Rasband and Liechty (2006), a garment is considered to be well-fitted if it has shoulder seams that rest comfortably on the shoulders, waist seams that sit on the natural waist of the body, darts that taper gently towards the fullest part of the body, vertical lines that run straight along the body, a garment that hangs without adding extra fullness, a garment with a smooth, even appearance, and long sleeves that end at the wrist. Individual choices, which may be functional, aesthetic, or economic, also significantly impact the fit of custom-made clothes, in addition to fashion changes, body

shape variance, measurement-related challenges, and fashion-related considerations.

Garment Ease

Ease is the additional fabric needed for comfort, ease of movement, and style that extends beyond the specifications of the body. With design ease for garment style, there needs to be enough room for the garment to fit comfortably and allow for movement. Ease is a very important part of figuring out how a garment fits because it affects both how comfortable it is to wear and how it looks. The disparity between the size of your body and the finished garment is what Page (2003) referred to as ease. Ease directly influences fit, appearance, and comfort.

There are two different types of ease: wearing ease and design ease. Wearing ease, movement ease, or dynamic ease are terms for the space available for movement. According to the fundamental principle of wearing ease the garment must not be excessively pulled, squeezed, knotted, stretched, or strained from its naturally relaxed state to allow the wearer to move freely, bend, breathe, sit, lift their arms, and walk (Myers-Mcdevitt, 2004). Wearing ease is an important part of how a garment fits. The clothing will strain, wrinkle, pull, and bind against the body in an uncomfortable way if the wearing ease is off, highlighting potentially unattractive body contours (Branson & Nam, 2007). This indicates that the clothing does not fit properly. So, the wearing ease should be comfortable for the person wearing it and not just chosen for its fashion value.

Changes in fashion trends, customer preferences, and body shapes might result in alterations to the commonly acceptable amount of wearing

ease. This results in a type of ease known as "design ease." According to Chen (2007), design ease is the amount of cloth needed to make the pattern or style of the garment. Design ease is used to make a garment seem the way you want it to, such as deciding if it will be loose, tight, or just right (Branson & Nam, 2007) because individuals have varying preferences for fit (Alexander, Connell, & Presley, 2005). This is one of the many things that can help customers decide which clothes fit them best. Furthermore, a simple design improves the wearer's comfort, movement, and capacity to keep up with the most recent fashion trends (Stamper et al., 2005). For example, if "length, loose-fitting tops" are in style, the designer of these tops may make them more supple. Some people like to wear what is in style, so this might be comfortable for them. This is different from people who like semi-fitted or tight-fitting clothes.

The ease of design depends on the type of fabric used and how you want to wear it. The fit at the breast, waist, hips, arm circumference, and armhole are directly impacted by the degree of ease. According to the silhouette of the garment, the sizing method recommends ease allowances for tops. 0 to 2 7/8 inches is needed for a close-fitting silhouette, 3 to 4 inches for a fitted silhouette, 4 1/8 to 5 inches for a semi-fitted silhouette, and 5 1/8 to 8 inches for a loose-fitting silhouette. Myers-McDevitt (2004) suggested specified ease allowances for clothing silhouettes.

Table 1: Lists the ease Allowances for that Myers-McDevitt Recommended Garment Silhouette (2004)

	Close- fitting	Fitted	Semifitted	Loose fitted	Oversized
Bust	½-2 in	2-4 in	4-5 in	5-8 in	Over 8 in
Waist/Hip	½ -2 in	2-3 in	3-4	4-6 in	Over 6 in
Waistband	¼ -1/2 in	½-3/4 in	¾ - 1in	1-2 in	Over 2 in
Armhole	1-2 in	2-3 in	3-4 in	4-5 in	Over 5 in
Upper Arm/ Sleeve	1-2 in	2-3 in	3-4 in	4-5 in	Over 5 in
Elbow	½-1 in	1-2 in	2-3 in	3-4 in	Over 4 in
Wrist	½ in	½ -1 in	1-2 in	2-3 in	Over 3 in
Shoulder seam	0-1/4 in	¼ - ½ in	½ - 1 in	1-1½ in	Over 1 1/2 in
Across Back	½-3/4 in	¾-11/4 in	11/4-2½ in	2½ -31/2 in	Over 3 1/2 in

Source: Myers-McDevitt (2004)

It is not easy to figure out the ease allowance for a key anthropometric dimension, though, because people have different preferences for ease. Ashdown and DeLong (1995) examined the relationships between ease values and body measurements. They studied to see fads in how people thought about and felt about ease values. The results showed that each subject could notice small differences in the ease of pants, but each subject had a different idea of what was acceptable and what they could notice. Therefore, a good fit requires more than simply precise body measurements, and designers must find ways to consider how individuals prefer their clothing to fit (Gill and Chadwick, 2009).

Body Measurement

There are different sizes in stores because people have different body sizes. One way to describe a body is by its measurements. This description is

then used to make clothes that fit well (Bye, Labat & Delong 2006). The measurements can be done by hand with a tape measure (Liechty, Rasband, and Pottberg-Steineckert, 2010) and preferably with known marks on the body (Roebuck, 1995) or with the help of some equipment, like a body scanner (Daanen & Ter Haar 2013). Yoon and Radwin (1994) say that the measuring should be done by someone else, preferably a trained expert.

Taking body measurements is the most essential and significant step in making a garment, according to (Singh & Nijhar, 2015). According to Pandarum and Yu (2015), the accuracy of the body measurements affects how well a garment fits. If a clothing is well fitted, it makes a person look better and adds to their personality. The measurements needed to make a garment depend not only on the style and type but also on the age and sex of the person who will wear it (Pandarum, & Yu, 2015). A measuring tape is the only thing you need to take measurements. Use a good tape measure that is easy to bend. If the tape is torn, broken, or stretches, it will give the wrong measurements. (Rudd, 2001). When figuring out how a garment fits, the size and shape of the body are important. Body measurements were an important part of all of this thesis's studies about making clothes. Rudd (2001) says that the following tips for taking body measurements, measuring techniques, and measuring procedures must be considered in order to have clothes that fit properly.

Guidelines for Taking Body Measurements

1. The individual being measured must stand with their feet 15 cm apart and their back straight.
2. Measurements should be taking while wearing well-fitting base layers.

3. Have one person measure another in order to get more accurate findings. Make sure you choose a tape that is both strong and flexible. It should not be able to expand or contract.
4. To measure horizontally, hold the tape parallel to the ground; to measure vertically, hold the tape perpendicular.
5. Take accurate measurement, pulling the measuring tape neither too tightly nor too loosely.
6. The needed dimensions depend on the garment's style and the wearer's preferences. So always inquire about the wearer's preferences.
7. To ensure accuracy, measurements must be performed systematically.

Techniques for Measuring

1. The person taking the measurement should stand to one side of the individual being measured.
2. Hold the tape securely, but not so tightly that the person becomes uncomfortable and self-conscious.
3. Do not permit the individual to look down while measurements are being taken.
4. Be discrete when taking the measurements, and carefully record them on the chart.
5. Do not adjust the measurements for ease. While creating patterns, ease can be applied.
6. It is more convenient to obtain all cross-sectional measurements first, followed by length-wise measurements.
7. During horizontal measurements, the measuring tape should not sag.

Table 2: The Steps Involved in taking Measurements

Neck	This is a rounded measurement taken around the neck's widest point or base. Wrap the tape around the neck, covering the base of the neck in the back and the front over the collar bone. This measurement reveals the width of the neck and is necessary for a snug-fitting collar.
Shoulder	It is possible to find this point by feeling for the end of the flat bone at the end of the shoulder or by elevating the arm until a depression forms at the end of the shoulder and feeling for the shoulder bone in this depression. This measurement is made by tracing a line from the base of the neck to the end of the shoulder.
Shoulder width/back width	At about 4" below the back neck, measure the distance between the ends of the shoulder bones.
High chest measurement	This dimension will provide a snug fit beneath the armpit and prevent creases. To take this measurement, run the measuring tape parallel to the back and across the front armpits. The tape should remain parallel to the floor in both the front and the back.
Bust	With the tape parallel to the floor, measure around the bust's widest section. The tape shouldn't sag towards the back. The tape needs to be both secure enough to prevent slipping and flexible enough to allow one finger to slide through.
Waist	Finding the natural waist is necessary before taking this measurement. In the narrowest area of the body, above the hipbone, is where the natural waistline can be found. The taking of this measurement will be made easier by a cord placed around the waist. Holding the tape parallel to the floor, measure around the cord.
Hip	With the tape parallel to the floor, measure around the hip's widest point (7 inches from the waistline).
High Hip	Hold the measuring tape around the hip at about 3 inches below the waist to obtain this measurement.
Armhole/Armhole	Measure by wrapping the measuring tape around the armhole and under the armpit.
Front waist length	From the highest point on the neck, cross the widest area of the bust, and measure down to the waist.
Shoulder to bust	The breast tip should be measured from the highest point of the neck. It's also referred to as bust point height. When designing a blouse, this is helpful for identifying the bust point.
Distance between bust points	A horizontal measurement used in the drafting of blouses to position darts that measures the distance between the bust points. Also known as bust point width.
Back waist length	To determine your waist size, take a measurement from the highest point of your neck down over your midsection.
Front neck depth	From the highest point of the neck, take a diagonal measurement towards the center front.
Back neck depth	Measure across, diagonally from the highest point of the neck to the middle of the back.

Source: Apawudza (2021)

Table 3: Sleeve Measurements

Upper arm	With one finger underneath the measuring tape, circle the broadest area of the biceps.
Lower arm	The bottom or the lowest edge of the sleeve should be measured.
Elbow	Arm circumference is taken at the elbow.
Wrist	At the level of the arm's wrist, take a circular measurement.
Sleeve length	Different styles have different sleeve lengths. Measure the length of the arm from the top of the shoulder to the desired level for short sleeves. Measure from the top of the shoulder down to the elbow and then to the wrist for a full-length sleeve by bending the arm at a small 90-degree angle.

Source: Apawudza (2021)

Table 4: Trousers (Pant) Measurements

Pant length	The appropriate pant length is determined by measuring from the waistline down.
Inseam	The distance between the ankle and the innermost section of the thigh, or the length of the pant.
Thigh	Measure around the area of the thigh that is the fullest.
Knee	From the waist to the knee, take a measurement.
Calf	Measure the area surrounding the calf muscle.
Ankle	Take a measurement around the ankle.
Crotch depth	Measure from the waist to the flat surface along the side seam while seated on a hard, flat surface.
Crotch length	By inserting the tape between the legs, measure the distance between the front and back waistlines.

Table 5: Skirt Measurements

Waist to hip	Measure the distance from the waist to the widest point of the hip.
Skirt length	According to the garment's design, measure from the waistline down to the desired length.

Source: Apawudza (2021)

Measurement Techniques for the Body

Linear Approach

Traditionally, the apparel industry has manufactured clothing by taking linear measures using a tape measure over the surface of the body and using these measurements to draft the pattern based on a mathematical foundation and approximation (Sohn 2012). Two points on the body are used to measure the linear distance. Sohn (2012) asserts that tape measures, callipers, and anthropometers are the traditional measuring devices used to obtain the essential two-dimensional data pertaining to a three-dimensional form.

Circumference and length are the two categories of linear measures. As an illustration, the length measurement is taken from one point to another, such as the wrist bone or the shoulder to the elbow. Simple and straightforward, this measurement applies to the pattern just as it was obtained from the body without the use of addition or subtraction (Sohn 2012). The measurements for circumference cover the entire body, including the chest, waist, hips, and knee. These metrics call for more adaptability. Although it is taken into account in all systems of garment design, ease tolerance for circumference differs depending on the type of garment (Hulme, 1954). As a result of its practicality, the linear method has been widely employed by many designers. However, linear approaches cannot adequately describe the three-dimensional aspect of the human body (Bye, et al., 2006). Body length and circumference do not correctly reflect body shape. For instance, even though the chest measurements of three human figures are the same, the shapes of the figures vary. As a result, academics have concentrated on conducting a thorough review of techniques for determining body form (Sohn 2012).

Body Scanning Technology in Three Dimensions (3D)

A digital soft copy of the surface geometry of the human body is created using 3-Dimensional (3D) body scanning technology, which is a non-contact measurement device that uses infrared or laser depth sensing and imaging technology. 3D body scanning technology has had an impact on apparel design and development since the turn of the twenty-first century. Since the 1990s, virtual modelling has been made possible by 3D body scanning, which has increased interest in the technology and has been employed in the creation of clothing products (Sohn 2012).

According to Lin and Wang, a body scanner is a tool designed to deliver a computer image of the body that is accurate in terms of measurements (2012). Cameras that use white light or laser to capture the body in 360-degree angles create a cloud of data points (Apawudza, 2021). According to Bye et al. (2006), the scan provides a permanent record that may be accessed for future research and is a non-contact way of taking body measurements. The development of body scanners has led to the development of a range of applications to extract linear measurements from the data, such as length, width, circumference, and the number of angles for use in pattern making and grading (Bye et al., 2006). The visual depiction on the computer screen can be rotated to observe the contour of the body. In order to provide the complete information, point, line, surface, shapes, and body volumes are all included (Zhang, Innami, Kim, & Takatera, 2015). New methodologies for the use and analysis of the data are being developed in order to obtain measurements or calculate body angles that are difficult to attain on the human body (Winter, 2002).

General cutting methods and practices in the formal and informal sectors

According to Ampomah (2015), fabric cutting for garment construction can be done using scissors or a machine. Fabric-cutting machines that are appropriate for the type of material can be used to cut fabric. These can include band cutters that operate similarly to band saws, cutters with rotary blades, reciprocating-saw machines, die clickers that resemble die or punch presses and computerized machines that either employ blades or laser beams to cut the fabric into desired forms. Both the formal and the informal sectors use the scissors or the machine to cut fabric for garment construction, depending on the availability of any.

According to Martha (2014), garment construction can be done using direct cutting or patternmaking. The direct cutting method is purely based on the designer's imagination and creativity. The designer pictures the style of the garment to be constructed. He or she cuts directly without any laydown guide. The craft of creating a plan or layout for sewing a piece of clothing is known as pattern creation. Thomas (2009) also stated that taking body measurements comes before any other process in the process of making a garment. After the measurement, the designer could opt to make a pattern or cut it directly.

According to Varney (1980), the use of patterns in the creation of clothing is necessary "to produce a better fit and to conserve material." Martha again observed that the mainly method used in garment construction in the formal sector is pattern making. The informal sector is direct cutting, especially in simple set-up enterprises. In her study, the traditional set-up enterprises more often use direct cutting than any other method. More sophisticated enterprises use both direct cutting and pattern-making. Martha

further noted that apprentices in the informal sector are more practically oriented than those in the formal setting.

Free hand cutting

Free-hand cutting, also known as "direct fabric cutting," is a technique for cutting a garment style directly on the cloth without using a pattern (Efajemue & Lily, 2011). Apart from ready-to-wear garments, many types of garment worn of late in Tamale are usually made using free-hand cutting. Contrary to pattern drafting, which is more expensive and difficult to utilize, the majority of Ghanaian small garment producers turn to this method of fabric cutting. Foster and Ampong (2012) claim that there hasn't been much done to record free-hand cutting. Free-hand cutting, according to Shailong and Igbo (2009), is a technique for cutting fabric that has been measured and marked with chalk without utilizing a paper pattern. In free-hand cutting, the individual's measurement is directly marked on the fabric. The fabric typically ends up being wasted if the dressmaker or tailor uses the free-hand cutting technique incorrectly.

Free-hand cutting, according to Thomas (2009), has occasionally led to ill-fitting clothing and disputes between dressmakers and their customers. Shailong and Igbo (2009) contend that using the free-hand method to make clothing can result in total ruin and fabric waste. Free-hand cutting, they said, takes time and is labour-intensive; as a result, it cannot be effectively used for large-scale buildings. According to the researcher's experience, poorly fitted clothing and disputes between dressmakers or tailors and their customers have occasionally been the outcome of free-hand cutting. According to Boakye (2010), consumers may favour ready-to-wear apparel as a result of the

substandard work performed by some dressmakers and tailors who employ free-hand cutting to manufacture clothing. This often increases the clothing budget for consumers due to fabric wastage when free hand cutting is used instead of pattern drafting (Foster & Ampong, 2012), which is the most used among tailors in the Tamale Metropolis. This may negatively affect the output of the dressmaking and tailoring institutes

Skills in Pattern Drafting

The art of designing a plan or layout for sewing clothing is known as pattern drafting (Aldrich, 2014), according to the encyclopedia (Bakker-Edoh 2018). Taking body measurements is the first stage in pattern drawing, according to Thomas (2009). She also advises that the subject should only be wearing basic undergarments when getting measurements for pattern drafting. According to Aldrich (2014), adopting shapes from a pattern while drawing a pattern can be quite helpful when making clothes. Anikweze (2013) claims that flat-pattern drafting involves using a piece of paper, a pencil, and all the pattern drafting tools to produce a pattern based on a set of measurements.

Flat pattern drafting is based on basic, standard-sized commercial patterns. However, when used in designing, fitting darts are used to improve clothing fit (Aldrich, 2014). The capacity to develop patterns to fit into cost-effective fabric layouts and the potential to redesign existing patterns and out-of-date garments into new ones are just a few benefits of flat-patterning, according to Anikweze (2013). Additionally, it makes it simple to pinpoint the origin of faults made when creating the pattern and how to fix them. According to sources such as Rosen (2004), Wandaka (2009), and Aldrich (2014), pattern drafting allows one to effectively plan and organize themselves

while making clothing (Bakker-edoh, 2018). Both MacDonald (2010) and Joseph-Armstrong (2010) contend that using patterns while creating clothing enhances its excellent looks and helps it fit more comfortably.

Construction of Clothing

Construction refers to the methods employed in the assembly of clothing (Marshall et al., 2004). The elements of construction include seams and stitching, techniques for fusing fabrics, and the application of notions to enhance the aesthetics of a garment (Brown & Rice, 2014). (Shields, 2011). Construction should meet the standards for quality because consumers regularly examine it (Shields, 2011). Choosing construction techniques is crucial since it affects every part of the garment (Shields, 2011).

Consumers place a high value on construction and workmanship, which is why they base their assessment of quality on it. Studies conducted in Kenya have shown that one factor contributing to the low consumer demand for locally-made clothing was poor workmanship (Edwinsson and Nilson, 2009). Consumers preferred foreign clothing, though, since they thought the materials and workmanship were of a higher calibre. Quality construction was listed as one of the determinants of total garment quality at the anticipation stage by Abraham-Murali and Littrell (1995). Consumers are not the only ones that connect garment construction quality to final product quality. The use of proper construction methods is also vital to garment producers in order to produce high-quality clothing (Scheller & Kunz, 1998).

Garment Construction Methods

According to Ampomah (2015), garment construction methods are varied. Some of them include crocheting and sewing. Although only one hook

or needle is used, crocheting uses the same interlocking technique as knitting. Ampomah (2015) goes on to say that crocheting is essentially the simplest kind of knitting and that only one needle with a hook at the end is required to make clothing using this technique. The art of sewing involves creating stitches using a needle and thread to fasten or attach items. One of the earliest textile arts is sewing, which dates back to the Paleolithic period (Anawalt, 2007). There are essentially two types of sewing: hand sewing and machine sewing. While machine sewing uses a machine to stitch, hand sewing uses a needle and thread to stitch by hand.

Importance of garment

According to Abraham, Adablah & Adotey (2017), A significant aspect that distinguishes humans from animals is overall clothing. It provides housing for the wearer in addition to weather protection. Different types of clothing are utilized during the procedure to meet individual demands. Clothing is worn throughout every stage of life, including childhood, elementary school, high school, college, the workplace, marriage, and old age. Every country's socioeconomic development is greatly influenced by the garment industry, which also serves as a means for individuals to buy the clothing they need. According to Omoavowere & Gloria (2017), the significance of clothing cannot be understated. Garments are worn because they shield the body from the elements, enhance physical beauty, and reveal information about the wearer to others. Ampomah (2015) says garment serves various purposes, including body protection. It can improve safety during potentially dangerous tasks such as trekking and cooking. It serves as a barrier between the skin and outside elements, shielding the wearer from rough surfaces, bug bites, and

plants that can cause rashes, splinters, thorns, and prickles. Clothing can protect the body from cold or hot weather and act as a hygienic barrier to keep dangerous and contagious substances out of the body. Additionally, the garment provides UV protection. According to Esiowu & Igbo (2008), each outfit reveals a person's personality to those around them, including whether they are conservative or daring, outgoing or quiet, casual or organized, a leader or a follower, and confident or doubtful. According to Shailong & Igbo (2009), clothing serves as a tool for interpersonal communication by conveying each person's distinct characteristics for social status, appeal, and humility. According to Ahia (2001), clothing acts as a tool for group identification, gender stereotyping, ceremonial differentiation, and status symbolization. These and other uses for clothing put significant pressure on individuals all over the world in terms of religion, society, and the economy.

Garment assemblage

Garment construction involves the conversion of raw material into a stitched and wearable piece of clothing, which involves putting together various components of it, such as fabric pieces, thread, buttons, zipper, and so on (Hayes, McLoughlin and Fairclough, 2012). It is about creating a three-dimensional garment from a two-dimensional design /pattern/ fabric and is a basic requirement of clothing production. Various parts of a garment, for example, in the process of assembling a shirt into a complete garment, the front and the back body, sleeve, cuff, placket, yoke, collar and pocket need to be assembled together to make a shirt (Ramesh, 2012). The figure shows the workflow of shirt production.

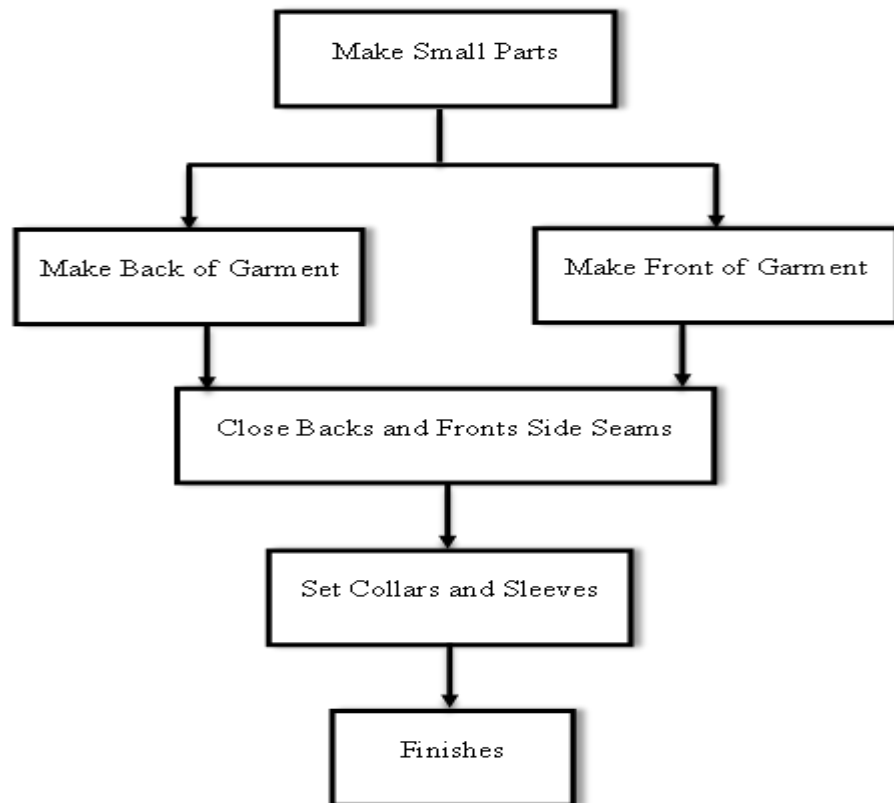


Figure 1: *Workflow of Shirt Production*

Source: (Ramesh, 2012)

Customer satisfaction with Garment

Customer satisfaction should be the most important measure of a company's success because it leads to behaviour and economic changes that are good for the company. Woodside, Frey, and Daly (1989) thought that customer satisfaction is the most important thing that affects how a customer acts. Several studies show that when customers are happier, they are more likely to stay loyal (Anderson & Sullivan, 1993). According to some, customer happiness lowers transaction costs, lowers the price elasticity of demand, and reduces the likelihood that consumers may defect if quality declines. It also helps to ensure future sales (Fornell, 1992). (Fornell, 1992). According to Hoyer and MacInnis (2001), the emotions of acceptance, happiness, relief, excitement, and delight can all be connected to satisfaction.

Customers who are satisfied return, may stay loyal to the brand, and spread good word of mouth, which will increase sales (Almossawi, 2012). When a customer has both good and bad experiences with a product or service, they may feel ambivalent about it (Zeithaml et al., 2009). According to Schneider and Bowen (1999), most customers are in the middle of being moderately satisfied or unhappy, and it is likely that if they had additional reasons to be glad, such as a better deal or a more convenient store location, they would be. Even then, it may not always be enough to maintain customers' loyalty because even content customers do not always stick around. Customers' experiences and satisfaction must constantly be improved. According to Heskett et al. (2008), clients' levels of satisfaction with the good or service, whether they are "very satisfied" or merely "satisfied", influences their likelihood of making a repeat purchase, which increases by five times.

Some real-world evidence suggests that companies that offer better quality make more money (Archer, 2003). Almost all businesses can make consistent profits by having customers who buy not only the first time but also again and again. Every business needs repeat customers to reach its end goal: make money and stay in business. Because of this, managers and researchers need to know how happy customers are and if they plan to buy again (Lusk & Jaeger, 2007). Customer value is a strategy for acquiring and retaining consumers, and it has become one of the most crucial success elements for both manufacturers and service providers (Zeithaml, 2006). Still, perceived performance is an important factor in determining value and either directly or indirectly increases the desire to buy again (Olorunniwo & Hsu, 2006).

Conceptual Framework for the Study

A conceptual framework is created to direct the investigation taking into account the research questions. Considering what has been discussed about the research's background so far, the following conceptual framework is a strategy for organising the study on how tailors in the metropolitan area of Tamale take measurements and utilise them to cut men's clothing. This conceptual framework illustrates the relationship between and influence of the study's key concepts. In addition, the conceptual framework comprises everything the study intends to demonstrate, so they may be considered and emphasized when the study's results and recommendations are formulated. This conceptual framework derives from the study's research objectives and literature background.

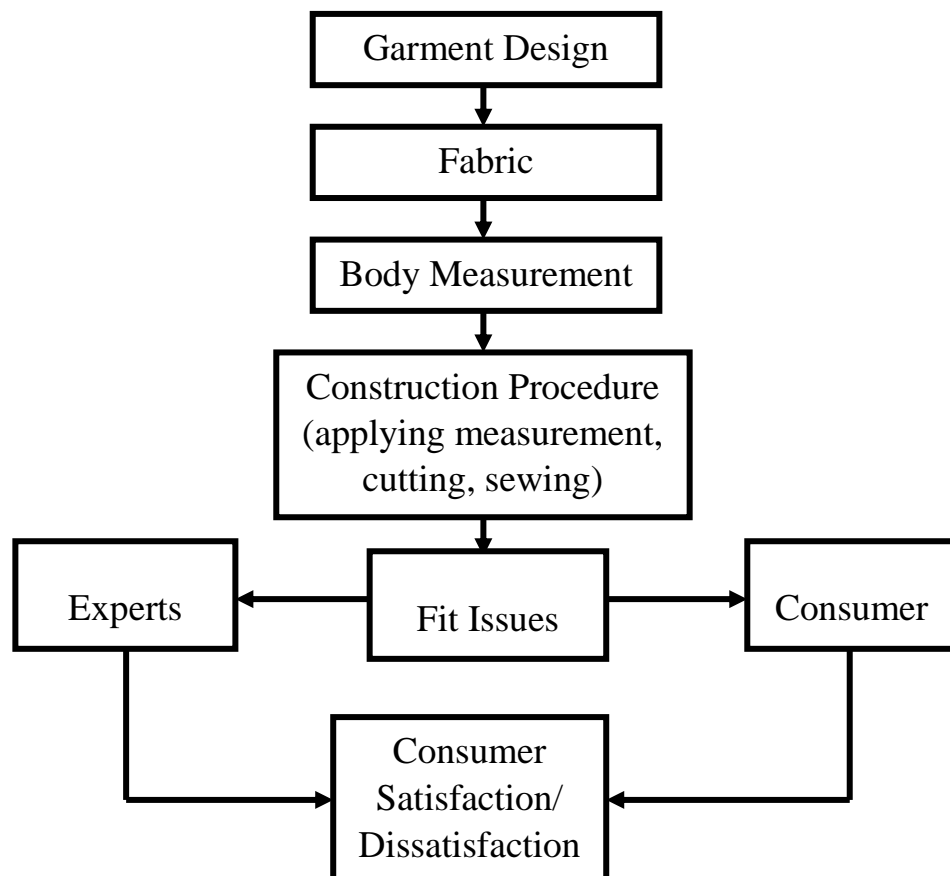


Figure 2: *Conceptual Framework from Author's Construct (2022)*

According to (Singh & Nijhar, 2015), taking body measurement is the most important and fundamental phase in the creation of clothing; without these measurements, clothing cannot be manufactured to fit the wearer. The illustration above shows that the conceptual framework's main emphasis is on body measurements. As shown in the diagram, the garment's design directly affects how the tailor takes the client's measurements. This is because the style of the garment will determine how the tailor takes the measurements and which landmarks to use. Measurements for a tailor are affected by the type of fabric and the way it is made. For example, if the fabric is stretchy and the right amount of measurement is not used when making the pattern and cutting it, the fit of the garment will be off. In contrast, the fabric is an important intrinsic element that, according to Kadolph and Marcketti (2016), can affect how a garment looks and fits.

Fit issues are closely related to body measurements. For a garment to fit well, it needs to be the right size for the person wearing it. Some clothing makers do not know how to take measurements of their customers to help them choose the right clothing fit and avoid fit problems. The above figure shows that experts and consumers can point out fit problems. Ashdown and Delong (1995) says how a garment fits affects how comfortable it is to wear and how long it will last. How well a piece of clothing fits depends on how each person feels about comfort, fit, and style. To make things even more complicated, the designer, the person who makes the pattern, and the person who buys the clothes all have very different ideas of what "fit" means. This means that both experts and regular people need to be used to judge how well a garment fits.

To determine how well a garment fits, it is important to get feedback from both the subject and an expert. However, such comments can assist designers in correcting errors, enhancing manufacturing in the clothing sector, increasing productivity, which will generate more revenue, and determining whether or not clients are satisfied with their custom-made attire.

Empirical Review

In the empirical review, we examine the work of others that is relevant to or significant for this study. This will allow for comparisons between the results of this study and those of other studies.

Consumers' Perception of Garment Quality

In the end, the goal of all economic systems is to make the consumer happy. So, the consumer's view of quality is the most important and generally accepted measure (Vowotor, 2002). When it comes to the consumer, high-quality clothing is one that fulfils their needs (Yoon and Kijewski, 1997). According to Kadolph (1998), a product's characteristics and quality are crucial from the consumer's point of view. Abraham-Murali (1996) also said that people judge the quality of clothes based on both abstract and concrete qualities. "Perceived quality" is another name for the qualities that can not be seen or touched (Abraham-Murali and Littrell, 1995; Clodfelter and Fowler, 2003).

Since the consumer will determine quality based on his or her own requirements and preferences, quality is viewed from the consumer's perspective as being arbitrary (Koskennurmi-Sivonen and Pietarila, 2009). This describes the buyer and how he or she thinks a product will meet their wants (Gocek and Beceren, 2012). So, a product can only make a customer

happy if it lives up to his or her expectations for quality. It's crucial for customers to have accurate knowledge about the garment's quality in order to obtain the most value for their money (Marshall et al., 2004). From this point of view, the consumers' main job is to make sure that a product meets or exceeds their expectations (Kadolph, 2010).

Drucker claimed in 1986 that a product's or service's quality is defined by what the customer gets out of it and is willing to pay for, not by what the manufacturer puts into it. Only useful and valuable items command a price from consumers. Customers are more concerned with a product's ability to satisfy their demands than just how it looks (Veale & Quester, 2009). From the perspective of the consumer, consumer expectations or views about how things should be are ultimately what determine the quality of a product. Consumer behaviour theories claim that a consumer's decision-making process continues even after they have purchased a product, such as the expectancy-disconfirmation theory (Cardozo, 1965). The evaluation of a product does not end when it is used, and it may be a key factor in deciding what to buy next.

Consumer rights have become a legal requirement or a recognized government policy in many developed nations. As a result, quality in business is now centred on the customer (Vowotor, 2002). Unfortunately, in contrast to those in developed nations, most people in developing countries have not known what their rights are for a long time. Instead, they have been more focused on meeting their fundamental needs (Food and Agriculture Organisation, 1993). This is gradually changing in the majority of emerging nations, including Ghana, where the consumer is getting more involved in industry quality (Vowotor, 2002). The consumer sets the agenda for business

in this new world, and the fashion industry is no exception. Because of this, it is more important than ever for manufacturing and service companies to focus their marketing on the customer if they want to keep their standing in the competitive worldwide market of today (Senauer, Asp & Kinsay, 1991).

Consumers believe that a garment possesses numerous features that can be used to determine its quality. During use, customers evaluate a product's efficacy based on its characteristics (Abraham-Murali and Littrell, 1995). There are two types of these traits: those that come from the person and those that come from outside the person. According to King (1993), a product's intrinsic characteristics are those that cannot be altered or manipulated externally without altering the product's physical properties. Examples of these intrinsic attributes are the fabric type and construction details, such as seams. Extrinsic attributes are things like the brand name and price that have to do with the product but are not part of the product itself. For customer satisfaction, a garment needs to do well on things that are very important to the customer, like finishing. It should also do well on things that are less important to the customer, like looks (Swan and Combs, 1976

Garment Quality Dimensions

There are two aspects to clothing product quality (Brown and Rice, 2014). These consist of physical characteristics and performance characteristics.

Physical characteristics of a Garment

According to Brown and Rice (2014), the finish, design, materials, and construction of a garment determine its physical form and physical attributes. These characteristics are also a component of what makes a garment what it is.

Thus if they were altered in any manner, it might alter the garment's quality and how people perceive it (Brown & Rice, 2014). For Shields (2011), the process of making a garment (style and fit), the fabric, and the way it is cared for all have an effect on its natural qualities, such as texture or colour. Even though they are used to judge the quality of a garment, intrinsic attributes appeal to different customers in different ways (Aqueveque, 2006; Brown & Rice, 2014; Abraham-Murali & Littrell, 1995). This means that a garment is thought to be of good quality when its natural qualities appeal to a specific consumer.

Design of a Garment

Apunda (2017) asserts that apparel firms' profitability depends on their capacity to create stylish and appealing garments. Suh, Carroll, and Cassill (2010) stated that creating attractive designs for clothing is essential to the success of the apparel sector. According to Koskennurmi-Sivonen and Pietarila (2009), individuals prefer custom-made clothing since the fashions are distinctive and conform to the desired details and fit. Additionally, manufacturers valued exceptional quality as having a flawless fit and styles that looked good on the customer's body. Fiore and Damhorst (1992) noted that individuals would purchase clothing that helped them seem attractive at all times. Swinker and Hines (2006) also reported that customers utilise style and fit to determine the quality of a garment.

The right fabric, colour, cut, and style for a garment must be chosen and understood by manufacturers (Keiser and Garner, 2012). The tools used to produce designs are design elements and principles. Colour, line, pattern, texture, silhouette, and shape are examples of design elements. These

components constitute a garment's design. Combining the many components of design to create something attractive is the essence of design. Understanding design principles and elements are necessary to do this (Keiser & Garner, 2012). Burke (2011) asserts that a good design results from the proper balance of style, uniqueness, and imagination when the elements and concepts are integrated.

Textiles used for Garment Production

Textiles refer to garment-making materials such as fabrics and notions (Brown & Rice, 2014). When evaluating garment quality, it is vital to evaluate the garment's fabric and fasteners (Kemp-Gatterson & Stewart, 2009; Brown & Rice, 2014). Fabrics and notions play a significant role in garment performance. Thus garment producers must pay close attention to them. Fabric refers to the textile material from which clothing is made (Glock & Kunz, 2005; Kemp-Gatterson & Stewart, 2009). Although a garment's performance is independent of its fabric, the two are highly connected. The quality of the entire garment is determined by the fabric, together with the notions, construction, and design (Brown & Rice, 2014).

Fabric quality must be monitored by garment manufacturers at every stage of production (Brown & Rice, 2014). Materials have a substantial impact on the quality of clothing, according to a study cited by Apunda (2017). Customers believed fabrics to be the best predictor of apparel quality, according to Fiore and Damhorst's observation in 1992. Due to its significant impact on clothing's general appearance and functionality, the fabric can affect the quality of a garment (Hines & O'Neal, 1995).

As this can enhance garment quality, garment producers should understand how materials are produced (Stewart & Kemp-Gatterson, 2009). These components eventually define the final quality of the garment, as well as its quality. It is essential to comprehend how a fabric's physical characteristics affect its performance in order to choose the best fabric for a particular outfit (Apunda, 2017).

Construction of a Garment

Construction is about how clothes are put together (Marshall et al., 2004). Construction includes taking body measurements, sewing seams and stitching, joining fabrics, and using notions to make clothing seem better (Shields, 2011). Consumers are always judging the quality of construction, so it should always meet their standards (Shields, 2011). Taking measurements and choosing the right way to put the garment together are important because they affect everything (Shields, 2011).

Consumers care a lot about how something is built and how well it is made, so this is how they judge how good something is. According to studies conducted in Kenya, poor craftsmanship was one of the causes why consumers did not buy many locally-made clothes (Edwinsson and Nilson, 2009). But consumers liked imported clothes more because they thought they were made of better materials and were better made. Abraham-Murali and Littrell (1995) said that quality construction could be used to predict the overall quality of a garment at the expectation stage. Consumers aren't the only ones who think that a garment's quality is based on how well it is constructed. Clothes makers also think it is important to use the right construction techniques to make high-quality clothes (Scheller & Kunz, 1998).

Finishing off a Garment

Consumers place a great deal of importance on how something is constructed and how well it is created. Therefore, this is how they evaluate its quality. Studies conducted in Kenya revealed that poor craftsmanship was one of the reasons buyers did not purchase many locally manufactured garments (Edwinsson & Nilson, 2009). But buyers preferred imported garments because they believed they were made of superior materials and were better constructed. Abraham-Murali and Littrell (1995) said that excellent construction might be utilised to forecast the overall quality of a garment during the anticipation phase. Consumers are not the only ones who believe that a garment's quality is based on how well it is constructed. The need to use the proper construction processes to produce high-quality garments is frequently emphasised by garment manufacturers (Scheller & Kunz, 1998).

A garment that has been properly pressed should not have any unwanted creases or pleats, a generally smooth and undisturbed appearance, clamp marks, burning, melting, or watermarks, pushed wrinkles, or hems pressed to the incorrect side, and no shine (Apunda, 2017). Pressing also improves the work's quality, makes garments fit better, and gives them a smoother appearance (Brown & Rice, 2014). Poor pressing can make well-made garments appear to be of inferior quality. Conversely, good pressing can conceal poor structure (Brown & Rice, 2014).

Garment Performance Characteristics

The performance of a garment determines the requirements it meets and the benefits it provides to the consumer (Apunda, 2017). How a garment works is determined by how it looks and feels. So, people buy clothes because

they think they have certain physical features that will make them work the way they want them to (Brown & Rice, 2014). For instance, a consumer may purchase wool fabric if she wants a clothing to keep her warm in the winter (physical features). A garment's performance features are advantageous and aesthetically pleasing (Brown & Rice, 2014).

Functional performance characteristics of clothing

Durability and variety of use are two elements of a garment's functional performance (Brown & Rice, 2014). Durability is the degree to which a garment retains its form and appearance after being used and cared for (Brown & Rice, 2014). It also pertains to how long a piece of clothing will function as planned (Kadolph, 2010). Features like shrinkage resistance, abrasion resistance, seam strength, colourfastness, pill resistance, and rip resistance serve as indicators of a garment's durability (Kadolph, 2010; Retief and De Klerk, 2003). The effectiveness of a garment is how well it works for what it was made for (Brown & Rice, 2014). The usefulness of a garment is measured by how well it works for its intended purpose, how easy it is to care for, how comfortable it is, and how well it fits (Retief & De Klerk, 2003).

The functional performance of a garment cannot be correctly assessed at the point of sale, according to Brown and Rice (2014). This is so that you may learn a lot about the comfort and fit of a garment by trying it on. Similarly, buyers use their past experiences to forecast the performance of a structure's design, construction, and materials. They cannot be certain of their prognosis until the garment is worn. Since most performance elements are concealed, they only become apparent when the garment is worn. Since determining how well a garment function continues while it is being worn and

maintained, to guarantee customer pleasure, the quality of the clothing must be determined.

A garment's attractive and functional qualities

For a garment to be purchased at the point of sale, it must look good (Brown & Rice, 2014). A garment's colour, style, and fit are all parts of its look. How a consumer thinks a piece of clothing looks depends mostly on what is in style and what they like. So, judging how something looks is a matter of opinion. Also, the aesthetics performance features alone can not be used to judge the overall quality of a garment. A garment's first sale and overall success depend on how it looks (Bye & Hakala, 2005). Fiore and Damhorst (1992) found that consumers' perceptions of a product's quality and level of satisfaction are influenced by its appearance (Schmitt & Simonson, 1997), as cited in (Sawyerr 2019). This is significant because customers want to stick with tailors that consistently meet their standards for clothing's visual appeal. When choosing and purchasing a piece of clothing, its aesthetic qualities are crucial since they contribute to satisfying buyers' expectations (Kimle, 1994) cited in (Sawyerr 2019).

Custom-Made Garment

Custom making is a method of making clothes that tries to meet each customer's needs and wants (Makopo, 2014). Every business that makes custom clothes must figure out what makes customers happy and how to control those factors so that customers keep coming back and the business stays profitable (Beceran & Gocek, 2012). A custom-made clothing is one that is made from scratch or to your exact measurements (Harrop, 2010). This particular style of clothes is tailored, cut, and created for a certain person

(Brown & Rice, 2014). In comparison to mass-produced apparel, it might give you a better fit and a more distinctive look (Peterson & Gordon, 2001).

Attributes of Custom-made Garments

To be able to suit the demands and preferences of his customers, a tailor must be aware of the materials used to create custom-made garments. However, it is not always obvious which aspects of a product are crucial to the client and how they affect satisfaction (Swan & Combs, 1976). When it comes to custom-made clothing, there is even more ambiguity regarding these attributes, as there is typically no actual sample available for the consumer to see before placing an order. When clients cannot point to a product, it is difficult for them to describe what they desire (Mapoko, 2014).

Style of Custom-made Garments

A garment's construction is its style (Marshall et al., 2004). Three major categories of styles are identified by Brannon (2000) and North, De Vos, and Kotze (2003). The first category is known as "high fashion." This is about the current fashion trend, which can be found in stores, and the runways' second characteristic of a classic style is its perpetual availability. The majority of classic styles are versatile and may be worn in a variety of ways. Consequently, a style is considered a classic when it remains popular for an extended period of time. Casual is the third category. This design arose because individuals placed a premium on functionality and comfort. When consumers purchase custom-made clothing, they either specify the desired style or allow the maker to pick one for them. This style may be fashionable, traditional, or informal.

Fit of Custom-made Garments

Fit refers to how well a garment fits an individual's body type or size. It is regarded that well-fitting clothes are one of the most essential customer requirements for custom-made clothing. Consumers frequently evaluate the quality of clothing based on its fit. For Zhang et al. (2002), one of the most significant factors in determining the quality of clothing is how well it fits. Personal desire, current fashion, and physical comfort are frequently determinants of a garment's fit. Fit is one of the primary advantages of custom-made clothing (Koskennurmi-Sivonen & Pietarila, 2009). Research on clothing has shown a keen interest in fit for a long time since it is seen as an essential aspect of garment quality and consumer satisfaction (Song & Ashdown, 2010). Multiple academics, such as Brown & Rice (2014), Laing & Sleivert (2002), and Outling (2007), have outlined fit in many dimensions as the interplay between the body and clothes, fusing the aesthetic study of fit with the objective assessment of comfort. According to Frost (1988), the function of clothes on the body as well as their visual and physical appeal, are all parts of garment fit. Fit is defined by Brown and Rice (2014) as "how well the apparel fits the three-dimensional human body." The two components of garment fit that Brand, Eckman et al., and Outling (2007) defined are aesthetic fit and functional fit. Aesthetic fit refers to how the garment looks on the body, whereas functional fit is concerned with the comfort and performance of the garment as a result of the fit.

As stated in Klerk & Tselepis (2007), Stamper, Sharp, and Connel (2003) defined well-fitting clothing as being comfortable to wear, allows for free movement, and being both visually pleasing and stylish. Despite the fact

that McRoberts (2005) also stated that a well-fitted garment should hang neatly, be free of wrinkles, flow easily over the curves of the body, and be comfortable to wear, these characteristics are not always present in well-fitted clothes. These discussions make it very clear that a garment must be worn on the body in order to be judged for fit. Therefore, a well-constructed clothing can be attractive to the appearance, but it cannot be deemed to have a good fit until it is worn on the body and the buyer experiences comfort. A well-fitting garment should enhance the body, hide form flaws, and create proportions that are balanced. One of the reasons clothing is manufactured is to decorate the body. To obtain a noteworthy fit, a garment must be of the appropriate size and match the wearer's body proportions (Tate, 2004).

Four main criteria can be used to evaluate an item's fit, according to Klerk & Tselepis (2007): appearance, comfort, design, and materials. When a customer wears a garment, appearance is what draws them to it on an aesthetic level. However, attractive items that are not comfortable will not be worn. It is essential to comfortably sit, bend, walk, and stretch in any clothing. Lastly, the sort of cloth used is essential for a proper fit. Depending on whether the fabric is soft or crisp, the appearance and fit of the identical pattern will change. As a result, some materials are avoided when designing clothing for particular body types. Avoid using fabrics like lycra on a person with a rectangular body type since they make you look slimmer and make it harder to hide imperfections. Cotton and linen are better than synthetic textiles for adding volume to the body. An unsatisfactory fit occurs when a garment is both too large and too small along a particular dimension (Ashdown & Delong, 1995).

Fit issues may be expensive and annoying for manufacturers as well as consumers. When a garment does not fit properly, the customer is disappointed regardless of the fabric, construction, or style of the garment (Winks, 1997). Additionally, customers profit from a better fit because their garments require fewer alterations (Tamburrino, 1992). A garment's fit, in turn, might have an impact on its comfort, depending on its design. Fit, though, can also be a matter of style. A "sexy fit," on the other hand, is attractive, yet a fit that is comfortable for movement is practical. Therefore, the consumer's perception of a perfect fit is arbitrary but crucial to their enjoyment (Brown and Rice, 2014).

Comfort of Custom-Made Clothing

One of a garment's most crucial qualities is comfort, yet because of its complexity, it can be challenging to evaluate (Tsang, 2013). In terms of clothing, comfort relates to how the body interacts with the material and how it transfers body heat, air, and moisture to the environment (Kadolph, 2010). A person's subjective perception of their level of clothing comfort depends on interactions with the material, the climate, their physiological system, and their mental state (Hu, Siu, Wang & Chang, 2006). In particular, the ability of a garment to transfer body heat and moisture to the environment, Fris (1997) stated that the comfort of a garment derives from a balanced process of heat exchange between the wearer, the environment, and the garment. Slater (1985) described clothing comfort as a pleasant state coming from a person's physiological, psychological, and physical harmony with his or her surroundings. Aesthetic, thermophysiological, and tactile are the three basic categories of clothing comfort (Yoon, 1984). Aesthetic appeal and

psychological comfort are mostly determined by subjective emotions and fashion trends. In order to maintain thermal balance between the human body and the environment, a fabric must be thermo physiologically comfortable.

A number of elements contribute to the comfort of clothing. However, when making custom-made clothing, the designer has little influence over the fibre composition and fabric selected by the customer. However, it is the designer's responsibility to select the most suitable constructional approaches to ensure a garment's comfort. In parallel studies, Wong and Li (2002) revealed that out of 10 evaluated qualities, comfort and garment fit were the two most essential aspects of sporting wear. According to Kadolph (2010), 80% of women and 83% of men in the United States cite comfort as the most important quality they want in apparel. Once more, an examination of consumer perceptions of clothing quality by Fujiwara, Park, and Tokoro (1994), cited in Sawyerr (2019), revealed that the intrinsic qualities of clothing, such as sewing craftsmanship, physiological comfort, usability, physical properties, and chemical properties, play a significant role in the evaluation of garment quality. Therefore, clothing comfort qualities play key roles in the current market and substantially impact each garment manufacturer's competitiveness (Hu et al., 2006). Those working in textile and garment production must be aware of and incorporate design advancements with the workmanship. In order to get the ideal level of comfort and aesthetic appeal in the clothes, it may be necessary to strike a balance between the attributes of stretch, drape, smoothness, etc., as dictated by the garment's intended end use, and to achieve the desired level of fit (Kadolph, 2010).

Care and maintenance of custom-made

The care needed to maintain a textile product's original appearance is known as garment care (Kadolph, 2010). It is anticipated that the clothing will bleed, fade, or deform during maintenance, as well as whether yarn slippage will take place. The care instructions for the item can be used to gauge how easy it is to maintain. But custom-made clothing typically lacks labels with care instructions (Koskennurmi-Sivonen & Pietarila, 2009), making it more challenging for the buyer to predict the garment's performance in the future when worn.

Price of Custom-made Garments

Price is regarded as an extrinsic attribute because it is not a part of the product itself but significantly affects the buyer's decision to purchase. Price can be viewed as what a customer forgoes or gives up in exchange for a product (Zeithaml, 1988). According to Eckman, Damhorst, and Kadolph, brand and price are the extrinsic factors that consumers most frequently consider when making clothing decisions (1990). The pricing is agreed upon between the producer and the customer before the process of making a made-to-order garment begins. Price is affected by the manufacturer's reputation, the type of clothing worn, the accessories to be worn, the quantity of labor required, the time required, the level of experience required, and the amount of work (Koskennurmi-Sivonen & Pietarila, 2009).

Serviceability of Custom-made Clothing

Garments Serviceability involves quickness, civility, skill, and ease of repair. In addition to product failure, customers are concerned about service appointments, timeliness, and contact with service personnel (Koskennurmi-

Sivonen & Pietarila, 2009). It also depends on the kind of service a manufacturer gives to its clients. Some service aspects may be evaluated objectively, while others must be evaluated subjectively. The level of customer interaction and service delivery is referred to as service quality (Ghylin et al., 2008). Service delivery is a crucial area for research because it has been identified as a significant area of concern for manufacturers. No marketer can afford to leave the service experience to chance, claims Shostack (1985), who claims that consumers are the primary source of information on quality and service distinctiveness. A custom-made garment is typically manufactured to the customer's specifications; therefore, the service needs extra attention to guarantee the greatest quality.

CHAPTER THREE

RESEARCH METHODS

The purpose of this study was to evaluate how tailors in the Tamale Metropolis in Ghana take body measurements for cutting men's shirt and its effects on garment fit. This chapter covers the study's methodological framework, which includes the study's research design, population, sample and sampling methods, and data-collecting tools. The chapter also discusses concerns such as the research instruments' reliability and validity, ethical issues, data collecting processes, and the method of data processing and interpretation of the study's findings.

Research Design

The scheme outlines or plan utilized to develop answers to research challenges is known as a research design (Orodho, 2003). The study was conducted using a descriptive research design. Saunders, Lewis and Thornhill (2003) posited that descriptive research tries to shed light on present difficulties or problems by a data-gathering procedure that allows the researcher to more thoroughly explain the situation. The design is a type of study that looks at an issue that isn't well defined and allows for a variety of strategies for selecting individuals, gathering data, and employing different instrumentation techniques (Check & Schutt, 2012). Measurement procedures are not well defined in this study, which has an impact on garment fit. As a result, descriptive design is ideal for this study since it will assist the researcher in clearly defining the body measurement procedures required to attain garment fit. The design is relevant for this study since it attempts to investigate the current state of how tailors' body measurements impact the fit

of garments produced. The descriptive design was chosen as well since it was highly representative and made it simple for researchers to get participant feedback (Polit & Beck 2014).

Despite all of these numerous advantages, descriptive surveys have certain drawbacks. Descriptive survey research design might be superficial, making it unsuitable for private, personal, or emotional issues that respondents may not be totally genuine and honest about (Wallen, 2014). However, in the present study, the problems are not private or emotionally charged, thus this descriptive survey's flaw won't have an impact on the results. According to a study by Brown (2013), descriptive research designs may be hampered if the relevance of the data is overlooked due to the researcher's excessive concentration on the study's coverage area. That is, when a huge amount of data is surrendered at the expense of quality or richness. Despite these shortcomings, Mege (2014) proposed that descriptive surveys are useful when a researcher wants to gather, analyse, and present information as it is actually found in the field without manipulating the key factors. The descriptive survey method was suited for this study since it assisted in gathering information on the methods used by tailors in the Tamale Metropolis to take body measurements of clients.

The study also employed a qualitative. A qualitative research according to Cresswell (2013) uses exploratory approach and seeks to explain how and why a particular programme operates as it does in a particular context thus qualitative research does the following, it investigates

1. local knowledge and understanding of a given issue or program.
2. peoples experiences meanings and relationships and
3. social processes and contextual factors.

In a qualitative research a non-numerical, covering images, videos, texts and people written or spoken words are usually used. Domegan and Fleming (2007) also defines qualitative research to explore and discover issues about a problem on hand, because very little is known about the problem. In this case measurement procedures are not well defined in this study, which has an impact on garment fit. The design is relevant for this study since it attempts to investigate the current state of how tailors' body measurements impact the fit of garments produced. The qualitative design was chosen as well since it was highly representative and made it simple for researchers to get participant feedback and also observe what they do during the working process (Polit & Beck 2014).

Study Area

This study was carried out in the Tamale Metropolis to examine body measuring practices and garment fit among male garment producers. The capital of Ghana's Northern Region is Tamale Metropolitan Assembly. It is one of the Northern Region's 28 districts. It shares borders with the Sagnarigu District to the northwest, the Mion District to the east, East Gonja to the south, and Central Gonja to the southwest. The Tamale Metropolitan Assembly was created via legislation (L.I. 2068). According to the 2021 Population and Housing Census (PHC), Tamale has a total population of 371,35, accounting for 9.4 percent of the region's population, with males accounting for 184, 675 (49.7%) and females accounting for 186,143 (50.3%), with 80.8 percent of the population living in cities and 19.1 percent in rural areas. This indicates that the Metropolis has more females than males. The Metropolis has a total land

area of 289.58 square miles located between 9°16 and 9°34 north latitude and 0°36 and 0°57 west longitude, according to GSS (2010).

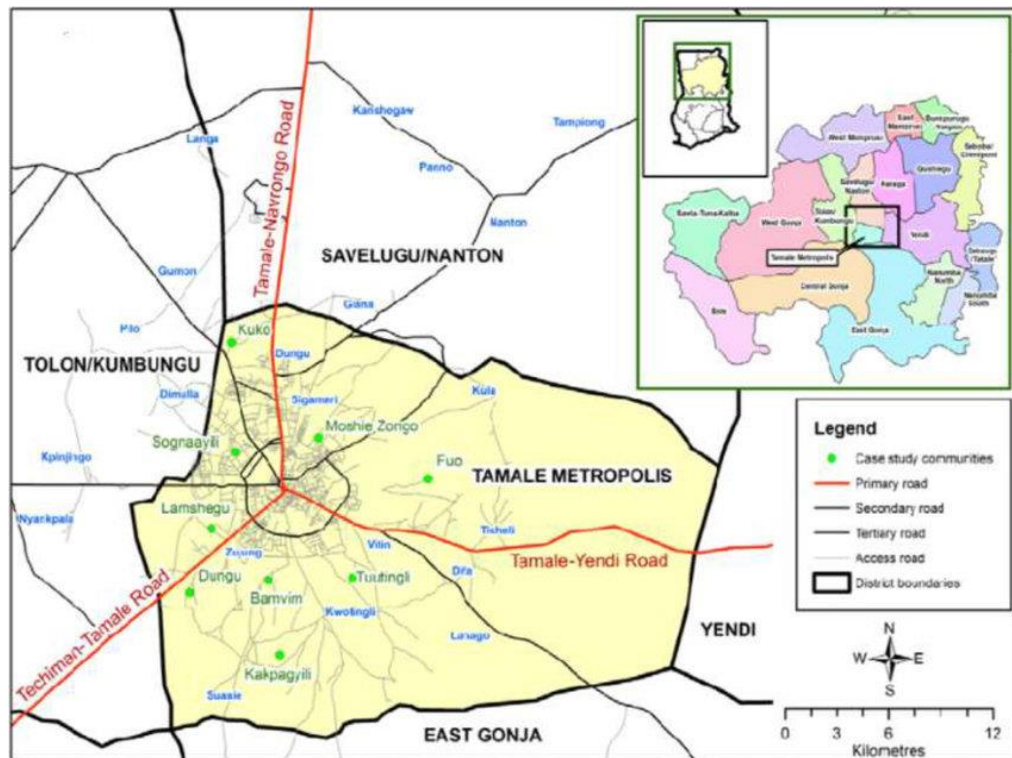


Figure 3: Map of Tamale Metropolis

Source: Ghana Statistical Service (2010)

Population

Polit and Beck (2004) defined population as the total number of cases meeting a set of criteria. The sampling unit, its geographical location, and its temporary bounds are defined by Neuman (2007) as population. Examples include a person, an organization, a written piece, or a social activity. Tailors in the Tamale metropolitan assembly will comprise the study's population. In the Tamale Metropolis, the Ghana National Dressmakers and Tailors Association have 518 registered dressmakers. As a result, the study's population includes all 518 registered members of the Ghana National Dressmakers and Tailors Association Tamale Metropolis. As the name indicates, the Ghana National Dressmakers and Tailors in the Association is

made up of tailors and dressmakers from both the formal and informal sectors who have banded together to develop and progress their profession. The organization was founded in October 1979. The association's operations include apprenticeship training and conducting workshops and seminars for members to improve their abilities. They also meet on a regular basis to discuss their activities and educate members on government policies affecting the garment manufacturing business in Ghana.

Sample and Sampling Procedure

A two-stage sampling method was used for this study. Purposive sampling was utilized to sample tailors who sew only male garments in the first stage, and random sampling was employed in the second stage to pick the sample to be used to gather data from the purposively selected male-only garment manufacturers. Purposive sampling, according to Babbie and Mouton (2007), is based totally on the researcher's judgment about the preset qualities or inclusion criteria of the sample that will be acceptable for the study's goal. Because the researcher's designs will exclusively be for men, the researcher intends to select tailors who specialize in sewing male clothing. Tailors that sew both male and female outfits, as well as solely female and male clothes, are members of the group. The researcher went to the association's headquarters and obtained the names and phone numbers of tailors who solely produce male clothing from the chairman's registry.

Only 43 people from the registry sew male clothing. For the study, 5 male garment producers were randomly selected using the lottery simple random approach. To randomly select samples, researchers draw numbers from the chosen sample. In this procedure, each member of the population was

assigned a number by the researcher. There is no such thing as an optimum sample size, according to Henn, Weinstein, and Foard (2009); sample size is often decided by the researcher's resources and the level of precision required in the study. Hence, the researcher chose 5 tailors since the processes and activities involved in the study are highly time-consuming and resource intensive.

Data Collection Instruments

Fit evaluation index, semi-structured interview guide, and observation checklist/guide were employed as data-collecting instruments in this study. The fit evaluation index was used to determine the physical fit of the tailor-made clothing. The instruments for the data collection were adapted from Apawudza (2021). It was separated into three sections: general fit principles, suitable quantities of ease, and proper placement of garment pieces and openings to guarantee a good fit. This was developed to let judges analyze the fit of garments stitched by tailors through physical examination as used by clients on positions including sitting, standing, walking and raised arms and certain parts of the body such as chest area, armhole area, shoulder to sleeve cuff, seat area and crotch area. Body measuring practices used by tailors, how they are implemented in cutting, and problems with the fit of the clothing created were evaluated using an observation checklist. The observation checklist was a significant data-gathering tool since it allowed the researcher to see tailors in their natural surroundings and how various tasks are carried out throughout garment manufacturing, including methods of taking measurements and tools, marking of landmarks on fabric, cutting method and tools. Furthermore, observational research gives insights into what events

mean to actors, which may be used to generate or enhance more controlled studies.

In addition to the observation guide, the tailors were interviewed using a semi-structured interview guide. According to Leedy and Ormrod (2010), the purpose of a semi-structured interview guide is for the researcher to ask the participant why and how questions in addition to a series of standard questions and to elicit additional explanations on the respondent's replies. This allowed the researcher to inquire about the tailors' backgrounds, such as their age, educational level, job experience, and justifications for processes utilized during garment creation.

Reliability of the Instrument

The degree to which research produces consistent outcomes or data after numerous trials is referred to as reliability. According to Fraenkel and Wallen (2009), it describes the degree of consistency of scores or answers from one administration of an instrument to another, as well as from one set of items to another. By performing many measurements on the same subjects, it is considered certified. Poor reliability makes it more difficult to track changes in measurement throughout the course of a study and reduces the precision of a single measurement (Mislery, 2004). A pilot study was used to assess the reliability of the data-gathering equipment. This was accomplished by identifying three tailors who sew male clothing in Tamale in the Northern Region, who were not part of the sample chosen for the research but share comparable features with the study participants. These tailors were given fabrics to sew a sample garment of a shirt and a trouser using measurements of a model data collected. After sewing, the fit was evaluated using five clothing

students from the Department of Family and Consumer Sciences using the fit evaluation index in order to test the reliability of the items used.

Validity of the Instrument

The validity, according to Fraenkel and Wallen (2009), refers to the appropriateness, accuracy, meaningfulness, and utility of data analysis of research outcomes. As a result, in order to ensure the validity of the research instruments, my supervisors and experts in the field analyzed the instrument and made the necessary adjustments and suggestions based on the research subject in order to make it acceptable for the study.

Data Collection Procedure

Polit and Hungler (2004) define data as "information gathered over the course of a study." The data collection for the study was done through a qualitative approach. Fit evaluation index, semi-structured interview guide, and observation checklist/guide were used to gather data in the field. With the aid of an official introductory letter from my department, contact was made with the Ghana Tailors and Dressmakers Association (GNTDA) in the region to explain the study's goal and significance to them. This ensured clarity and convenience in the data collection process. The researcher provided a one-garment design shirt and trouser design for the tailors, which they are all sewing using the measurement of one client. The choice of style was based on the fact that this is common design used by males within the metropolis, and they cover crucial points of garment fit like chest, across shoulder, armhole, calf, seat, waist and body rise.

The researcher collected data as a non-participant observer, the researcher employed the services of a qualified tailor to assist with observation

during the observation phase in order to obtain trustworthy and accurate data. Provision was made by the researcher to book an appointment with tailors on the day they will be free to take the body measurement of a model in a gradual process for the researcher to observe and take data. On this day, the researcher and a model went to the tailors for the measurement to be taken and then gave tailors the fabric, other materials necessary and the design to be used for the garment to be sewn.

After the measurement, the researcher scheduled another appointment with each of the tailors to observe the cutting of the fabric. During the cutting of fabrics, the researcher spent a period of about 4 hours with each dressmaker within one week. Observations were made during the measurement and cutting procedures in the tailor's shops between the hours of 10 am to 4 pm with the help of observation checklist/guide. The researcher scheduled time for the interview with the participants ahead of time after the cutting of fabric in order for participants to prepare well before data collection started. Five judges who were clothing and textile lecturers in the Department of Family and Consumer Sciences from the University for Development Studies were used in evaluating the fit of the garment. These judges are fit experts and were oriented on the fit evaluation index. The judges evaluated the fit of the garment sewn by tailors on the live model by the client whose measurements were taken by the tailors. The client model wore all the garments sewn by the tailors, one after the other and stood in front of the panel of judges who responded to the Fit Evaluation Index. The client model also evaluated all the garments he wore, one after the other.

Data Analysis

Data from open-ended items were organized into themes for thematic analysis, while data from closed-ended items were coded and analyzed statistically. Frequencies and percentages were used to analyze the bio-data and research question 1, while mean and standard deviation was used to analyze research questions 2 and thematic analysis was used to analyse the research question 3. For research question 4, thematic analysis was employed.

Ethical Approval

The study deals with people as respondents (tailors in Tamale). As noted by Kombo and Tromp (2006), researchers whose subjects are people or animals must consider the conduct of their research and give attention to the ethical issues associated with carrying out their research. To ensure ethical practice, the researcher obtained consent from respondents and permission to record the interview, take photographs and as well as the time the researcher spent with them at their shops for the observations. Before the commencement of the study, the Institutional Review Board (IRB) of the University of Cape Coast gave its approval and issued a letter of clearance for the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

This study's objective was to examine body measurement practices used by male clothing producers in the Tamale Metropolis and assess how well their products fit the customers. This chapter is made up of the analysis and discussion of data gathered from studies within the metropolis. The responses participants provided on their demographics, the body measurement procedures, observations on procedures applied by participants in applying measurement in garment construction and evaluation of the fitting of garment produce were analysed using frequencies and percentages for easy understanding. Using the study's research questions as a guide, the data is presented and analyzed.

Presentation of Results

Demographic Characteristics

Table 6: Age and Educational Level of Participants

Age	Frequency	Percentage
30-35	3	60
36-40	1	20
41-45	1	20
Total	5	100
Educational Level	Frequency	Percentage
JHS	1	20
SHS	1	20
NVTI (Grade one and two)	1	20
University	2	40
Total	5	100

Source: Field work (2022)

This study employed 5 male tailors (respondents) who produce only male garments for clients. The results from the table indicate that 60% were between the ages of 30-35 while 20% within the ages of 36-40 and 41-45 years respectively. According to the table, all participants had some type of formal education, with the majority (40%) reporting having finished a university degree and the remaining (20%) having completed JHS, SHS, and NVTI (grades one and two), respectively.

Years of Operation

The participants used in the survey said they had operated for a number of years, with Tailor A said to be operating for 11 years, Tailor B for 9 years, Tailor C for 4 years while Tailors D and C operated for 7 years respectively. The findings show that because the study's respondents have worked in the field for a while and they have the knowledge and expertise needed to offer the data needed for the study.

Table 7: Skill training, Cutting Method Learned, and Cutting Method used

Training in skills	Frequency	Percentages
Only apprenticeship	4	80
School	0	0
Apprenticeship and school	1	20
Total	5	100
Cutting method learned	Frequency	Percentages
Freehand cutting	4	80
Pattern drafting	0	0
Both	1	20
Total	5	100
Cutting method used	Frequency	Percentages
Freehand cutting	5	100
Pattern drafting	0	0
Both	0	0
Total	5	100

Source: Field work (2022)

The results from the Table 7 above show that most of the respondents, 80% learnt the skills through apprenticeship training, while the least 20% received their training from both apprenticeship and school. Also, from the table, 80% of the respondents their skills through freehand cutting, while 20% acquired the training using both freehand and pattern drafting. However, all of the respondents use the freehand cutting method in clothing production.

Research Question One: How are body measurements of clients taken by tailors in Tamale?

Taking accurate body measurements is one of the keys to a great fitting garment. Whether you choose to make your pattern block or free-hand cutting techniques, having accurate measurements is critical to the success of a well-fitting garment. The body measurement practices employed by tailors in Tamale through observation by the researcher are as follows;

Tools and equipment to use and their state/conditions

Tape measure: All tailors used tape measure during the measurement-taking process and took measurements in inches. Tailors A, B, C and D had 60-inch plastic tape measures, which were not in very good condition. Tailor E also had the same tape measure, but the tape measure was very old, and the numbers on it were not very legible.

Pen, Pencil, Chalk: Tailor B and C used pen to record the measurement taken on the client, Tailor E used pencil, while Tailors A and D made use of tailor's chalk.

Book, Paper, writing on fabric: Tailor A and C recorded the client's body measurements on the fabric provided by the client to be used for the garment, Tailor A and D had the measurement recorded on a piece of paper and pinned

on the fabric whiles Tailor E had a standard teacher's note book for keeping records of client measurement.

The body measurements to be taken

For the type of garment design that was used for the study (a long sleeve shirt and a trouser), certain parts of the body needed to be measured to ensure quality fit and also portray the features of the design to be for the research. Table 8 below shows the measurements needed and the ones that were taken by the tailors.

Table 8: Measurements taken by Tailors

Measurement	Measurements taken by Tailors					Total	Total
	A	B	C	D	E	Yes	No
Neck size	-	-	-	-	-	0	0
Around Chest	Yes	Yes	Yes	Yes	Yes	5	0
Syce depth	-	-	-	-	-	0	0
Across back	Yes	Yes	Yes	Yes	Yes	5	0
Sleeve length	Yes	Yes	Yes	Yes	Yes	5	0
Cuff size	-	-	-	-	Yes	1	0
Shirt length	Yes	Yes	Yes	Yes	Yes	5	0
Trouser Seat	-	Yes	-	-	-	1	0
Trouser waist	Yes	Yes	Yes	Yes	Yes	5	0
Trouser length	Yes	Yes	Yes	Yes	Yes	5	0
Trouser bottom width	Yes	-	-	-	-	1	0
Inseam measurement	-	-	-	-	-	0	0
Crotch depth	-	-	-	-	-	0	0
Thigh measurement	-	-	-	Yes	-	1	0

Source: Field work (2022)

Yes= Measurement point was located

No = Measurement point was not located

The results in Table 8 show that none of the tailors took neck measurement, syce depth, Inseam measurement and crotch depth. All the 5 tailors took measurements for chest, across back, sleeve length, shirt length, trouser waist and trouser seat. However, measurement cuff size, trouser bottom width and thigh measurements recorded 1 tailor, each taking measurements on these parts.

Position of tailor when taking the measurements

The position of the person taking the measurement is paramount to how well the measurement can be taken on the client's body. Tailor B stood beside the client during the measurement-taking process. Tailor A, D and E stood in front of the client during the process, while tailor C was moving around the client during the measurement-taking process.

Interaction with clients by tailor

With regards to interaction with the client during the body measurement-taking process, 4 of the tailors; Tailors A, B, C and D, interacted with the client's during the measurement-taking process by asking questions on whether certain measurements (shirt and trouser length, chest and waist) were okay for the client while only Tailor E took measurement without interacting with the client.

How the individual body measurements are taken

Measurement is the reason why different sizes of garments are displayed in clothing retail shops. However, it has to follow certain precautions to ensure that they are taken appropriately, especially when it comes to custom-made garments. The write-up below summaries procedures

tailors used for the study went through to take body measurements of their clients. All measurements were taken in inches.

Tailor A

The body measurement that was taken by Tailor A and used for sewing the garment included the shirt (shirt length=27, sleeve length=24, chest=37, shoulder=19) and trouser (waist=32, trouser length=38, button width=14)

The procedure used by Tailor

Shirt length: The tape measure was placed at the bone at the nape of the neck to the required length.

Sleeve length: The tape was placed loosely from the top of the shoulder down to the elbow and then to the wrist for a full sleeve length with the client's arm hanging beside him.

Chest: Measurement was taken while the tape was placed around the body at chest level, and two fingers were put inside between the body and the tape raised towards the armpit.

Across back: At the back of the neck, measurement was taken on the distance between the ends of the shoulder bones.

Waist: For the waist indent, the tape was wrapped around the body and parallel to the floor on the natural waist below the belly, with two fingers put within the tape and the body.

Trouser length: The trouser length was determined by measuring from the waistline down to a little below the ankle.

Trouser bottom width: This measurement was taken around the ankle by wrapping the tape around it in a loose manner.

Tailor B

The body measurement that was taken by Tailor B and used for sewing the garment included the shirt (shirt length=30, sleeve length=26, chest=36, Across back=18) and trouser (waist=30, trouser length=38, seat=36)

The procedure used

Shirt length: The tape was placed on the shoulder bone beside the neck to the length of the shirt, a little above the waist line.

Sleeve length: The tape was positioned from the top of the shoulder down to the elbow and then to the wrist for a full-length sleeve. The tailor also made the client bend the arm at a small 90-degree angle while he was taking measurements.

Chest: With the chest, the tape was wrapped around the body and parallel to the floor at nipple level, with the tape very loose and not close to the body. While standing in beside the client, with the right hand holding the tape, the left hand was used to adjust the tape at the back of the client.

Across back: Just below the back neck, the tape was used to measure the distance between the ends of the shoulder bones.

Waist: A little above the hipbone, the measurement was taken by holding the tape parallel to the floor and measuring around the waist.

Trouser length: Tape was put around the hipbone and below the belt of the client to determine the appropriate trouser length by measuring from the waistline down.

Seat: Measurement was around the fullest part of the buttocks by wrapping the tape a little distance down the waistline.

Tailor C

The body measurement that was taken by Tailor C and used for sewing the garment included the shirt (shirt length=27, sleeve length=24, chest=34, Across back=18, wrist=8) and trouser (waist=30, trouser length=36)

The procedure involved

Shirt length: The tape was placed on the shoulder, borne just by the neck and dropped through the stomach down the waistline for the length.

Sleeve length: For the sleeve length, the client was wearing a long sleeve shirt. Hence, the tape was positioned from the top of the shoulder down to the elbow and then to the wrist, exactly where the client's shirt sleeve length end.

Chest: The tape was placed around the body at chest level, just under the armpit. Held by one hand with two fingers between the body and tape, and the other hand was used to adjust the tape at the back and sideways of the client's body.

Across back: Whiles standing at the back of the client, the tape was placed below the back neck, and the distance between the ends of the shoulder bones was measured.

Wrist: Measurement was taken by wrapping the tape around the area surrounding the calf muscle with a finger inside the tape attached to the body.

Waist: Holding the tape parallel to the floor, measurement was taken around the hip bone a little above the belt of the trouser the client was wearing.

Trouser length: For the length, the tape was placed on the hipbone exactly on the belt of the client's trousers and measured from the waistline down to the ankle.

Tailor D

The body measurement taken by Tailor D and used in sewing the garment included the shirt (shirt length=30, sleeve length=25, chest=38, Across back=19) and trousers (waist=31, trouser length=36, thigh=22)

Procedure involved

Shirt length: With the tailor standing in front of the client, the tape was placed on the shoulder bone beside the neck to the stomach downward to determine the length of the shirt below the waistline.

Sleeve length: The tape was positioned from the top of the shoulder down to the elbow and then to the wrist to determine the sleeve length.

Chest: With regards to the chest, the tape was wrapped around the body and parallel to the floor with two fingers inside the tape measure held by the right hand with the left-hand use for adjustment of the tape on the body.

Across back: At the back of the neck, the tape was used to measure the distance between the ends of the shoulder bones by placing it from one shoulder to the other.

Waist: During the waist measurement, the tape was wrapped around the body and parallel to the floor above the belt on the client's trouser with two fingers put within the tape and the body in a loose manner.

Trouser length: The trouser length is determined by measuring from the waistline downward to the ankle.

Thigh: Measurement was taken by wrapping the tape around the area of the thigh loosely to match the shape of the trouser worn by the client.

Tailor E

The body measurement that was taken by Tailor E and used for sewing the garment included the shirt (shirt length=28, sleeve length=26, chest=35.5, Across back=17, around arm 12) and trouser (waist=31, trouser length=38, bottom width=8.5)

The procedure involved

Shirt length: With the tailor standing beside the client, the tape measure was placed on the bone at the nape of the neck down to below the waist line to determine the required shirt length.

Sleeve length: The tape was stationed on the top of the shoulder down to the elbow and then to the wrist for sleeve length to be determined.

Chest: For the chest area, the tape was put around the body with two of his fingers kept inside the tape measure between the body and the tape and adjusted to determine the length.

Across back: The tape was placed below the back neck, and the distance between the ends of the shoulder bones was measured for across the back.

Around arm: This was measured by wrapping the measuring tape around the arm between the armpit and the elbow of the client with two fingers within.

Waist: A little above the hipbone, the measurement was taken by holding the tape parallel to the floor and measured around the waist with two fingers put within.

Trouser length: The tape was placed on the hipbone above the belt of the client's trousers and measured from the waistline down to the ankle.

Ankle: Measurement was done by wrapping the tape around the ankle a little tight with a finger inside to determine the measurement.

Addition of Ease During Measurement Taking

All tailors took the client's body's measurement in inches without adding ease during the process. They insisted that; ease can only be added when the measurement is to be applied to the fabric.

Table 9: Comparison of Client Body Measurements Taken by Tailors

Parts of the body	Measurements as taken by the tailors					Common comments
Shirt Measurement						
	A	B	C	D	E	
Neck size	-	-	-	-	-	Neck cannot be measured; it standard after sewing.
Chest	37	36	34	38	35.5	
Scye depth	-	-	-	-	-	Standard measurement is used.
Across back	19	18	18	19	17	
Sleeve length	27	26	24	25	26	
Cuff size	-	-	8	-	-	The wrist area is shaped from the upper arm to the wrist.
Shirt length	27	30	27	30	28	
Trousler Measurement						
Seat	-	36	-	-	-	You will just look at the person and shape it
Trousler waist	32	30	30	31	31	
Trousler length	38	38	36	36	38	
Trousler bottom width	14	-	-	-	-	For this one, you need to use the client structure.
Crotch depth	-	-	-	-	-	
Thigh measurement	-	-	-	22	-	We use standard measurement.
						We look at the client figure and shape it.

Source: Fieldwork (2022)

The results in Table 9 above show a comparison of body measurement by tailors. Though few of the measurements were the same, majority of the measurements were not the same from each tailor's outcome. Tailor E

meanwhile stated that body measurement on the same client cannot be same by tailors even when they are trained by one master because it cannot be predictable. However, most measurements were omitted.

Research Question Two: How do tailors apply body measurements in the construction of male garments?

The aim of this research question was to identify the methods tailors use in applying the measurement of the client in the process of cutting out the fabric before assembling it into a garment. The results are present according to each tailor's procedure on how he applies measurement in marking out and cutting. It is noted that each tailor was provided with 2 yards of African print fabric for the shirt and 3 yards of fabric for the trouser.

Cutting of Shirt and Trousers by Tailor A

The procedure that follows shows how the shirt outline was drawn and cut out.

Cutting Front of shirt

Procedure for cutting out shirt.

Measurements used for shirt body:

1. Around chest=37
2. Across shoulder=19
3. Shirt length=27
4. sleeve length=24

Front

The fabric was folded with such that

1. 1-2 = shirt length = on fold and squared out at both points
2. 1-3 = $\frac{1}{4}$ around chest + 3" (for seam allowance and ease) + 1.5 for button/ buttonhole extension.

3. $1-A = 2-C = 1.5$ = button/ buttonhole extension.
4. $A-3 = 2-4 = \frac{1}{4}$ around chest measurement + 3”.
5. $A-B$ = Neck width = 3” (This was a standard measurement used based on experience.)
6. $A-D$ = Neck = 2.5” (This was a standard measurement used based on experience.)
7. D was joined to b with a smooth curve to form the front neckline and extended to D’ on the button/buttonhole extension.
8. $A-E = \frac{1}{2}$ Across shoulder + 2” (for seam allowance)
9. E was dropped by 2” to F to get the shoulder slope.
10. FG was a smooth curve drawn for the armhole with the armhole depth determined based on tailor’s experience.
11. D’DBFG4C2D’ was cut out for the front shirt.

Back

1. The fabric for the back was folded with the width as for the front minus the button /buttonhole extension.
2. The front piece was placed on the folded fabric for the back such that the DC line aligned with the fold for the back.
3. $A-H = B-B' = E-F = 2''$
4. $H-B' = 3.5''$ = back neckline width
5. $A'-H = 3''$ = Back neckline depth.
6. A-B was curve in as smooth curve to get the back neckline.
7. A'C4GE'BA' represent the outline cut for the shirt back.

Note:

For the front shirt the armhole was deepened by $\frac{1}{2}''$ at mid-armhole.

Shirt Bodice

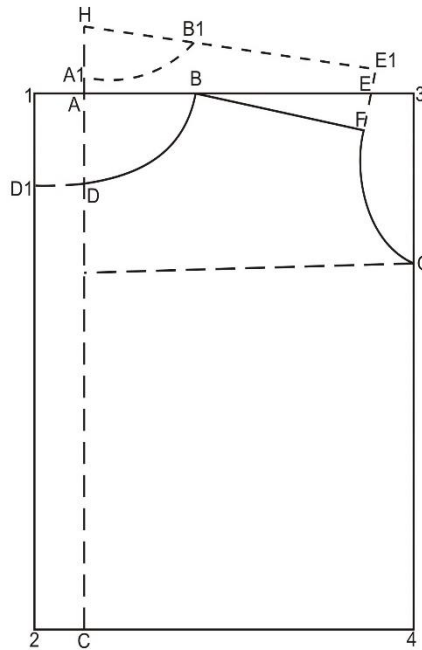


Figure 4: *Marking out and cutting of shirt*

Cutting of back yoke

1. A fabric was folded a little larger than the width $\frac{1}{2}$ across shoulder + seam allowance.
2. The back piece was placed on the folded fabric and a part out of the top part of the back was cut with a yoke depth which was 8 inches at centre back and square across to armhole.

Cutting of Sleeve

Measurements used:

Sleeve length=24

1. $A-C = \text{sleeve length} + 3''$ minus cuff depth; on fold and squared out at both points to C-E
2. $A-B=C-E=\frac{1}{2}$ armhole measurement (This was a guess measurement of 9 inches used based on experience.)

3. $B-D = \frac{1}{3}$ arm scye measurement + $\frac{1}{2}$ " (a guess measurement of 6 inches used based on experience.)
4. A-D = A was joined to D and the midpoint marked.
5. From midway measure about 1.5" above the A-D line and 1" midway towards the D. (Experience was used to draw a sleeve cap seamline as shown in the diagram)
6. $C-E_1 = \frac{1}{4} C-E = \text{Wrist of sleeve}$ (This was a guess measurement used based on experience.)
7. He then joined E1-D and $\frac{1}{2} C-E_1$, marked the middle for a slit 4.5"

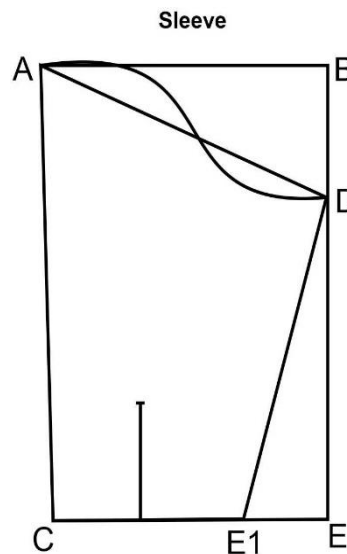


Figure 5: *Marking out and cutting of sleeve*

Collar

The collar measurement was determined by using the neck after joining patterns of the body.

For the collar the tailor drew the two pieces out on different fabrics and then added seam allowance of about $\frac{1}{2}$ inch during the cutting out.

Outlining and cutting the collar stand

1. 0-5 = stand which measured 1.5 inches and squared to 1 and 6 respectively to form a rectangle.
2. 1-6 = 1.5 inches
3. 1-7 = button/button hole extension of the garment neckline
4. The front area of the button/button hole extension was shaped as shown in the diagram.
5. The stand was then cut leaving a seam allowance of about $\frac{1}{2}$ inch all round.

Outlining the collar fall

1. 1234 = A pattern with a width of 3 inches and length being equal to centre back measurement to centre front measurement of the garment neckline.
2. The collar point was drawn as shown in the Figure 6.
3. The stand was the cut leaving a seam allowance of about $\frac{1}{2}$ inch all round.

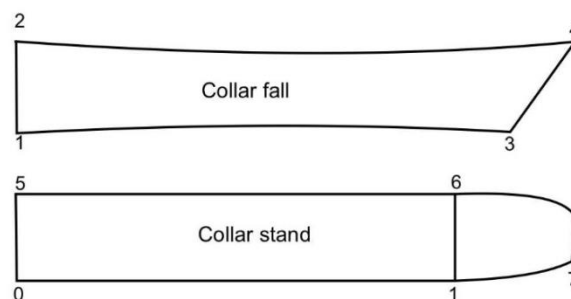


Figure 6: *Marking out and cutting of collar*

Sewing the Shirt

1. The yoke was prepared and attached to the back bodice and the shoulders of the shirt were joined together.

2. The pocket was prepared and attached to the left front chest of the shirt 6" below the shoulder line.
3. The two-piece collar was prepared and attached to the neckline using a seam allowance of 0.5 inches.
4. The sleeves were prepared by introducing a placket on the back sleeve and the cuff at the lower edge of the sleeve and stitched using 0.5 inches as seam allowance.
5. The sleeves were attached to the armhole with a seam allowance of 0.7 inches, and the side seams of the shirt were stitched together using 1 inch as seam allowance.
6. The hem of the shirt was stitched using 0.5 inch as seam allowance
7. Buttonholes were prepared with an interval of 4 inches and buttons were fixed on the shirt.

Trouser Outline

Procedure for cutting out trouser.

Measurements used for trouser:

1. Waist=32
2. Trouser length=38
3. Bottom width=14

Front

1. 0-1= Body rise measurement + 2" squared across (This was a guess measurement used based on experience.).
2. 1-2= Inside leg measurement; square across (a guess measurement of about 27 inches was used based on experience.).
3. 1-3= $\frac{1}{2}$ the measurement 1-2; square across.

4. $1-4 = \frac{1}{4}$ seat measurement + 2" square up to 5 (about 8 inches was a guess measurement used based on experience.)
5. $5-6 = \frac{1}{2}$ inch
6. $4-7 = \frac{1}{4}$ the measurement 4-5.
7. $4-8 = \frac{1}{4}$ the measurement 1-4 minus $\frac{1}{2}$ inch.
8. Experience was used to draw a curve joining 6-7 and 7-8 with the curve touching a point 1.5" from 4.
9. $2-9 = \frac{1}{2}$ bottom width measurement + 1" was squared up to 10 on the knee line.
10. $10-11 = 1$ inch
11. Using experience, tailor draw the inside leg seam join 9-11 with a straight line; join 8-11 curving line inward by $\frac{1}{2}$ inch.

Back

1. $6-12 =$ A guess measurement of about 1.5 inches; square up 1.5 inches to meet 13.
2. Join 13-0 with a straight line.
3. $4-14 =$ midway measurement 4-5.
4. $8-15 =$ the measurement 4-8 + $\frac{1}{2}$ inch.
5. $15-16 = \frac{1}{2}$ inch, join 13-14 and 14-16 with a curve touching a point 3 inches from 4 (Experience was used to draw the curve)
6. $9-17 = 1"$
7. $11-18 = 1.5"$
8. With the use of experience, tailor draw the inside leg seam by joining 17-18 with a straight line; join 16-18 curving the line inward 1 inch.

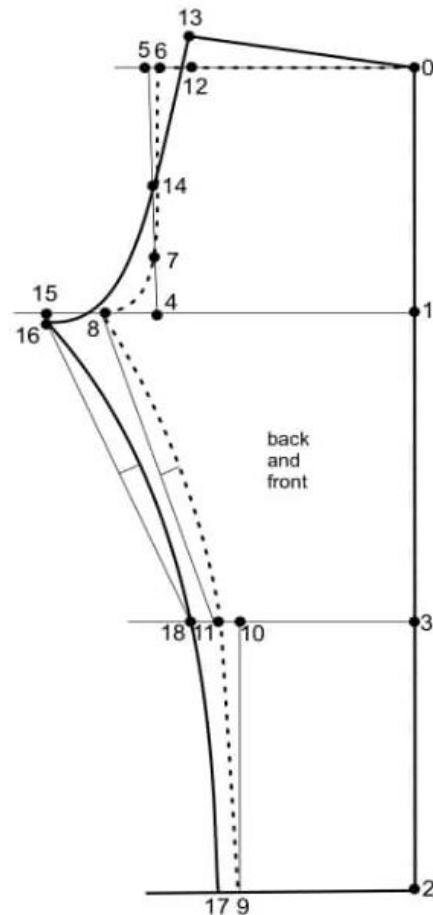


Figure 7: *Marking out and cutting of trouser.*

Sewing the Trouser

1. Preparation and sewing of side pockets were done first.
2. Prepared and sew the flap and attached the zip, and joined the front pieces together.
3. The back trouser pieces were prepared by stitching the dart and to prepare the back pocket.
4. Side seams were joined together (left side and right) using $\frac{1}{2}$ inch.
5. Waistband and belt holes were also prepared and attached to the trouser and pressed.
6. Joining of the inside legs was done using $\frac{1}{2}$ inch, and turned hems using 1 inch.

Cutting of Shirt and Trousers by Tailor B

The body measurement used for shirt: (shirt length=30, sleeve length=26, chest=36, Across back=18) and trouser (waist=30, trouser length=38, seat=36)

The procedures that were used on how the shirt outline was drawn and cut out for Tailor B was the same procedure used by Tailor A. The only variation existed in in the sewing procedure as outlined:

Sewing the Shirt B

1. The yoke was prepared and attached to the back bodice, and the shoulders of the shirt were joined together using 0.5 inches as seam allowance.
2. The pocket was prepared and attached to the left front chest of the shirt 7" below the shoulder line.
3. The two-piece collar was prepared and attached to the neckline using a seam allowance of 0.5 inches.
4. The sleeves were prepared by introducing a placket on the back sleeve and the cuff at the lower edge of the sleeve and stitched using 0.5 inches as seam allowance.
5. The sleeves were attached to the armhole with a seam allowance of 0.5 inches, and the side seams of the shirt were stitched together using 0.5 inches as seam allowance.
6. The hem of the shirt was stitched using 1-inch seam allowance
7. Buttonholes were prepared with an interval of 3 inches and buttons were fixed on the shirt.

Sewing the Trouser B

1. Preparation and sewing of side pockets were done first.
2. Prepared and sew the flap and attached the zip, and joined the front pieces together.
3. The back trouser pieces were prepared by stitching the dart and to prepare the back pocket.
4. Side seams were joined together (left side and right) using $\frac{1}{2}$ inch.
5. Waistband and belt holes were also prepared and attached to the trouser and pressed.
6. Joining of the inside legs was done using $\frac{1}{2}$ inch, and hems turned using 2 inches.

Cutting of Shirt and Trousers by Tailor C

The body measurement used for shirt (shirt length=27, sleeve length=24, chest=34, Across back=18, wrist=8) and trouser (waist=30, trouser length=36).

The procedures that were used on how the shirt outline was drawn and cut out by Tailor C were the same procedure used by Tailor A. However, variation existed in the sewing in the sewing procedure as outlined:

Sewing the Shirt C

1. The yoke was prepared and attached to the back bodice, and the shoulders of the shirt were joined together using 1.3 inches as seam allowance.
2. The pocket was prepared and attached to the left front chest of the shirt 7" below the shoulder line.

3. The two-piece collar was prepared and attached to the neckline using a seam allowance of 0.5 inches.
4. The sleeves were prepared by introducing a placket on the back sleeve and the cuff at the lower edge of the sleeve and stitched using 1.8 inches as seam allowance.
5. The sleeves were attached to the armhole with a seam allowance of 0.5 inches and the side seams of the shirt were stitched together using 1.3 inch as seam allowance.
6. The hem of the shirt was stitched using 0.7-inch seam allowance.
7. Buttonholes were prepared with an interval of 3.3 inches and buttons were fixed on the shirt.

Sewing the Trouser C

1. Preparation and sewing of side pockets were done first.
2. Prepared and sew the flap and attached the zip, and joined the front pieces together.
3. The back trouser pieces were prepared by stitching the dart and to prepare the back pocket.
4. Side seams were joined together (left side and right) using 0.7 inch.
5. Waistband and belt holes were also prepared and attached to the trouser and press.
6. Joining of the inside legs was done using 2 inches, and turn hems using 1.5 inches.

Cutting of Shirt and Trousers by Tailor D

The body measurement used for shirt: (shirt length=30, sleeve length=25, chest=38, Across back=19) and trousers (waist=31, trouser length=36, thigh=22).

The procedures that were used on how the shirt outline was drawn and cut out for Tailor D were the same procedures used by Tailor A. The only variation existed in the sewing in the sewing procedure as stated below:

Sewing the Shirt D

1. The yoke was prepared and attached to the back bodice, and the shoulders of the shirt were joined together using 0.5 inch as seam allowance.
2. The pocket was prepared and attached to the left front chest of the shirt 6.7" below the shoulder line.
3. The two-piece collar was prepared and attached to the neckline using a seam allowance of 0.5 inches.
4. The sleeves were prepared by introducing a placket on the back sleeve and the cuff at the lower edge of the sleeve and stitched using 0.5 inches as seam allowance.
5. The sleeves were attached to the armhole with a seam allowance of 0.5 inches, and the side seams of the shirt were stitched together using 0.5 inches as a seam allowance.
6. The hem of the shirt was stitched using 0.5-inch seam allowance.
7. Buttonholes were prepared with an interval of 3.8 inches and buttons were fixed on the shirt.

Sewing the Trouser D

1. Preparation and sewing of side pockets were done first.
2. Prepared and sew the flap and attached the zip, and joined the front pieces together.
3. The back trouser pieces were prepared by stitching the dart and to prepare the back pocket.
4. Side seams were joined together (left side and right) using $\frac{1}{2}$ inch.
5. Waistband and belt holes were also prepared and attached to the trouser and press.
6. Joining of the inside legs was done using $\frac{1}{2}$ inch, and turn hems using 1 inch.

Cutting of Shirt and Trousers by Tailor E

The body measurement used for the shirt: (shirt length=28, sleeve length=26, chest=35.5, Across back=17, around arm 12) and trouser (waist=31, trouser length=38, bottom width=8.5).

The procedures used on how the shirt outline was drawn and cut out for Tailor E was the same procedure used by Tailor A. The only variation existed in the sewing in the sewing procedure as stated below:

Sewing the Shirt E

1. The yoke was prepared and attached to the back bodice and the shoulders of the shirt were joined together using 1 inch as seam allowance plus.
2. The pocket was prepared and attached to the left front chest of the shirt 7.4" below the shoulder line.

3. The two-piece collar was prepared and attached to the neckline using seam allowance of 0.5 inch.
4. The sleeves were prepared by introducing a placket on the back sleeve and the cuff at the lower edge of the sleeve and stitched using 1.5 inch as seam allowance
5. The sleeves were attached to the armhole with a seam allowance of 0.5 inch, and the side seams of the shirt were stitched together using 2 inch as seam allowance plus.
6. The hem of the shirt was stitched using 1-inch seam allowance
7. Buttonholes were prepared with an interval of 4.2 inches and buttons were fixed on the shirt.

Sewing the Trouser E

1. Preparation and sewing of side pockets were done first.
2. Prepared and sew the flap and attached the zip, and joined the front pieces together.
3. The back trouser pieces were prepared by stitching the dart and to prepare the back pocket.
4. Side seams were joined together (left side and right) using $\frac{1}{2}$ inch.
5. Waistband and belt holes were also prepared and attached to the trouser and prss. e
6. Joining of the inside legs was done using 1 inch, and turn hems using 1.5 inches.

Figure 8: Samples of how measurement was applied by Tailors



Figure 8: Application of measurement on the fabric

Research Question Three: How well does the custom-made garment produced by tailors fit consumers?

The aim of this study question was to evaluate how clients are satisfied with the fit and alignment of garments sewn by tailors. The garment sewn by tailors was evaluated by five clothing experts who were clothing lecturers in the Department of Family and Consumer Sciences and Department of Creative Art Design and Technology at the University for Development Studies on a model. The garment was worn by a one-fit model who then stood in front of the experts who provided feedback using the Evaluation Fit Index form. The live model also evaluated the fit of the garments worn base on his experience as a client wearing the garment. The tables below present results for the evaluation of the fit of the garment by the expert judges using an Evaluation Fit Index Form.

Fit evaluation by Judges

Table 10 presents the fit evaluation of the shirt and trousers by the judges on the model while he was in various positions. The positions of the model include sitting, standing, walking and raised arms. Five-point rating employed by Apawudza (2021), with 1 being extremely tight, 2 being somewhat tight, 3 being good fit, 4 being mostly loose, and 5 being extremely loose, was employed.

Table 10: Judges' Evaluation of Fit of Garments on the Model in Various Positions

Tailor	Sitting		Standing		Walking		Arms overhead	Total mean for shirt	Total mean for Trousers
	Shirt	Trouser	Shirt	Trouser	Shirt	Trouser			
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)		M(SD)	M(SD)
A	3.8(.8)	3.8(.5)	2.8(.8)	3.8(.5)	3.8(.8)	4.2(.8)	3.2(.5)	3.4(.7)	3.9(.6)
B	2.6(.9)	2.6(.6)	2.4(.6)	2.2(.5)	2.8(.8)	2.2(.5)	3.2(.5)	2.8(.7)	2.3(.5)
C	3.8(.8)	1.8(.8)	3.4(.6)	2.2(.5)	3.2(.5)	2.0(.0)	4.0(.0)	3.4(.4)	2.0(.4)
D	3.4(.6)	2.8(.5)	2.8(.5)	3.0(.0)	2.8(.5)	2.4(.6)	3.4(1.3)	3.1(.7)	2.7(.3)
E	3.2(.5)	2.6(.6)	3.4(.6)	3.2(.5)	3.4(.6)	3.0(.7)	2.8(.8)	3.2(.6)	2.9(.6)
Total	3.4(.7)	2.7(.6)	3.0(.6)	2.9(.4)	3.2(.6)	2.8(.5)	3.3(.6)	3.2(.6)	2.8(.5)

Tailor A-E Scale, M=Mean, SD=Standard Deviation

Tight=1-2.4, Good fit=2.5 -3.4 and Loose fit=3.5 – 5

Source: Field work (2022)

The judges evaluation in Table 10 shows that for tailor A the best fit for the shirt was when the model was in a standing position (M=2.8) and when the model had his arms raised (M= 3.2) with the rest of the positions recording a loose fit (M=3.8). The trouser on the other hand was generally loose fitting (M=3.8-4.2) This is reflected in the mean of means with shirt (M=3.4) and trouser(3.9) indicating that for tailor A the shirt fitted well but the trouser was loose fitting.

For tailor B, overall the shirt fitted well ($M=2.8$) while the trouser was tight fitting ($M=2.3$). The individual positions of the model however shows that apart from the standing position where the shirt looked tight fitting ($M=2.4$) all the other positions showed a good fit ($2.6-3.2$). The trouser had a good fit ($M=2.6$) in the sitting position while for the two other positions the fit was tight ($M=2.2$).

Also, for tailor C the best fit for the shirt was when the model was in a standing position ($M=3.4$) and when the model was walking ($M=3.2$) with the rest of the positions recording a loose fit ($M=3.8$). The trouser on the other hand was generally tight fitting ($M=1.8-2.2$). This is reflected in the overall means with shirt ($M=3.4$) and trouser (2.0) indicating that for tailor C the shirt fitted well but the trouser was tight fitting.

The fit evaluation for Tailor D shirt was tight fitting when walking ($M=2.4$) but had good-fit in all other positions ($M=2.8-3.4$). The trouser on the other hand fitted good in all positions ($M=2.8-3.4$). The results reflected in the mean of means for shirt ($M=3.1$) and the trouser ($M=2.7$).

With regards to tailor E, overall the shirt ($M=3.2$) and the trouser ($M=2.9$) fitted well. The individual positions of the model shows that all positions for the shirt showed a good fit ($2.8-3.4$). The trouser also had a good fit ($M=2.6-3.2$) in all positions evaluated.

Fit evaluation by Model

In order to determine how well the client feels about the fit and performance of the garment during use, the live fit model was also asked to evaluate the fit of the garment himself using the same criteria used by the judges. The five-point rating employed by Apawudza (2021), with 1 being

extremely tight, 2 being somewhat tight, 3 being good fit, 4 being mostly loose, and 5 being extremely loose, was employed. However, for the purpose of analysis, the following was considered; 1-2.4 = tight; 2.5-3.4 = good fit and 3.5-5 = loose to ensure a clear and definite understanding.

Table 11: Model Evaluation on the fit of Garments in Various Positions

Tailor	Sitting		Standing		Walking		Arms	Means	Means
	Shirt	Trouser	Shirt	Trouser	Shirt	Trouser	overhead	for	for
	Shirt	Trouser	Shirt	Trouser	Shirt	Trouser	Shirt	shirt	Trouser
A	4	5	4	5	4	4	3	3.8	4.7
B	3	2	3	3	3	2	2	2.8	2.3
C	3	2	3	2	3	2	3	3	2
D	4	4	3	3	3	3	3	3.2	3.3
E	3	4	4	4	3	4	2	3	4
Mean	3.4	3.4	3.4	3.4	3.2	3	2.6	3.2	3.3

Tailor A-E Scale

1=Extremely Tight, 2=Somewhat Tight, 3=Neutral, 4=Mostly Lose and 5=Extremely Loose.

(Tight=1-2.4, Good fit=2.5 -3.4 and Loose fit=3.5 – 5)

Source: Field work (2022)

Table 11 shows how the model evaluated the fit of the garment on himself using the same criteria used by the judges. For Tailor A, the shirt had a good fit when the arms were raised above the head, with a score of 3. All other positions were loose fitting on the model for shirt (4). The trouser was also loose in all position recording a score (4-5) This is confirmed by the overall means of TA, the means were (M=3.8 for shirts and M=4.7 for trousers).

Tailor B's evaluation was good, fitting well in the positions for sitting, standing and walking, scoring (3) in those positions for the shirt but recorded a

tight fit when the arm was raised above the head (2). However, the model evaluation shows that apart from the standing position where the trouser looked well fitting (3) all the other positions showed a tight fit (2). This shows a reflection in the overall means with a well fitting shirt ($M=2.8$) and a tight fitting trouser (2.3).

In the case of Tailor C, the model evaluated a better fit for the shirt in all positions, recording a score of (3). However, the trouser had a tight fit with a score of (2) in all positions, indicating that the shirt produced by Tailor C fitted the client better than the trouser (with overall means for shirt ($M=3$) and trouser ($M=2$) as seen in the table).

For Tailor D, overall the shirt fitted well ($M=3.2$) with the trouser also fitting well ($M=3.3$). The individual positions of the model however shows that apart from the sitting position where the shirt fitted loosely (4), all the other positions showed a good fit (3). The trouser also had a loose fit (4) in the sitting position while for the two other positions was good fitting (3).

The results show that for Tailor E, the best fit for the shirt was when the model was in a standing and walking position (3) and tight when the model had his arms raised (2) with the sitting positions recording a loose fit (4). The trouser on the other hand was generally loose fitting (4). This is reflected in the mean of means with shirt ($M=3$) and trouser (4) indicating that for Tailor E the shirt fitted well but the trouser was loose fitting.

The fit of garments on different parts of the body by judges

To get more details on the fit of the outfits, the judges were asked to evaluate the fit for selected parts of the body using the same 5-point scale used for determining fit by Apawudza (2021), with 1 being extremely tight, 2 being

somewhat tight, 3 being good fit, 4 being mostly loose, and 5 being extremely loose, was employed. For purposes of analysis, however, the following was considered; 1-2.4 = tight; 2.5-3.4 = good fit and 3.5-5 = loose. The body parts used were the chest area, armhole area, shoulder to-sleeve cuff, seat area and crotch area. Table 12 shows the results of the evaluation.

Table 12: Fit in Different Parts of the Body by Judge's

Tailors	Chest area	Armhole area	Shoulder to sleeve cuff	Seat area	Crotch area	Total mean for shirt	Total mean for Trousers
	Shirt only	Shirt only	Shirt only	Trouser only	Trouser only		
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)
A	2.4(.6)	2.6(.9)	3.0(1.2)	4.0(.7)	3.8(.5)	3.0(.9)	3.9(.6)
B	2.8(.5)	2.6(.9)	3.8(.5)	2.4(.6)	2.2(.5)	3.1(.6)	2.3(.6)
C	3.6(.5)	3.8(.5)	3.4(.6)	1.8(.5)	2.4(.5)	3.6(.5)	2.1(.5)
D	2.4(.5)	3.8(.5)	4.2(.4)	2.8(.5)	2.8(.5)	3.5(.5)	2.8(.5)
E	3.6(.9)	4.0(.0)	3.0(1.0)	2.8(1.1)	3.6(.6)	3.5(.6)	3.2(.8)
Means	3.0(.6)	3.4(.6)	3.5(.7)	2.8(.7)	3.0(.5)	3.3(.6)	2.7(.5)

Tailor A-E Scale, M=Mean, SD=Standard Deviation

Tight=1-2.4, Good fit=2.5-3.4 and Loose fit=3.5-5

Source: Field work (2022)

Table 12 is not exhaustive for all the areas of a garment that are evaluated for fit. However, these were areas suggested by the researcher and, with reference to Sawyer (2019), are deemed good to ensure the fit of a garment can be evaluated. From the evaluation, Tailor A had the best fit for the shirt when the model was in armhole and sleeve to cuff area (M=2.6 and 3.0) respectively with the chest area recording a tight fit (M= 2.4). The trouser on the other hand was generally loose fitting (M=3.8 and 4.0) respectively. This is reflected in the mean of means with shirt (M=3.0) and trouser(3.9) indicating that for tailor A the shirt fitted well but the trouser was loose fitting.

With Tailor B, the shirt had good fit in all the areas that were examined for fit ($M=2.6$ and 2.8) respectively. The trouser on the other hand fitted tightly in all the areas ($M=2.2$ and 2.4) respectively. For Tailor B, therefore, one could conclude that, the shirt had a better fit than and trouser which was tight fitting base on the overall means for shirt ($M=3.1$) and trouser ($M=2.3$)

The overall shirt for Tailor C fitted loosely ($M= 3.6$) while the trouser was tight fitting ($M=2.1$). The individual positions of the model however shows that apart from the shoulder to cuff position where the shirt looked well fitting ($M=3.4$) all the other position showed a loose fit (3.6 and 3.8) respectively. The trouser all position had fit being tight ($M=1.8$ and 2.4) respectively.

With regards to Tailor D, the individual positions of the model however shows that apart from the chest position where the shirt looked tight fitting ($M=2.4$) all the other position showed a loose fit ($M=3.8$ and 4.2) respectively. The trouser however, had a good fit ($M=2.8$) in the positions evaluated. For tailor D, overall the shirt fitted loosely ($M= 3.5$) while the trouser was well fitting ($M=2.8$).

The results also shows that for tailor E the best fit for the shirt was in a shoulder to cuff position ($M=3.0$) with the rest of the positions recording a loose fit ($M=3.6$ and 4.0) respectively. The trouser on the other hand and fitted well in the seat area ($M=2.8$) but was loose fitting in the crotch area ($M=3.6$). The mean of means with shirt ($M=3.5$) and trouser (3.2) indicates that, for tailor E the shirt was loose fitting but the trouser fitted well.

Table 13: Fit in different part of the body by model

Tailors	Chest area	Armhole area	Shoulder to sleeve cuff	Seat area	Crotch area	Means for shirt	Means for Trousers
	Shirt only	Shirt only	Shirt only	Trousers only	Trousers only		
A	4	4	4	4	4	4	4
B	3	2	2	2	3	2.3	2.5
C	3	3	2	2	2	2.6	2
D	3	3	2	3	3	2.6	3
E	3	3	4	4	1	3.3	2.5
Means	3.2	3	2.8	3	2.6	3.2	2.8

Tailor A-E Scale

1=Extremely Tight, 2=Somewhat Tight, 3=Neutral, 4=Mostly Loose and 5=Extremely Loose.

(Tight=1-2.4, Good fit=2.5 -3.4 and Loose fit=3.5 – 5)

Table 13 shows how the model evaluated the fit of the garment on himself using the same criteria used by the judges on different parts of the garment. For tailor A, overall means shows the shirt fitted and trouser fitted loosely (M=4). The individual positions evaluated by the model also shows all position showed a loose fit for the shirt (4). The trouser also had a loose fit (4) in all the areas.

The results also indicated that, Tailor B shirt had a good fit the chest area (3). All the other two areas were tight fitting on the model (2). The trouser was also tight around the seat area recording a score (2) but fitted well at the crotch area (3). This is confirmed by the overall means of Tailor B, the means were (M=2.3 for shirts and M=2.5 for trousers).

Tailor C evaluation was good, fitting well in the positions for chest and Armhole area (3) in those positions for the shirt but recorded a tight fit at the shoulder to cuff area (2). However, the model evaluation shows that all

positions for trouser fitted tight (2). This shows a reflection in the overall means with a well fitting shirt ($M=2.6$) and a tight fitting trouser (2).

With regards to Tailor D, apart from the shoulder to cuff area recording a tight fit (2), the model evaluated a better fit for the shirt's two other areas, recoding a score of (3). The trouser had a good fit with a score of (3) in all positions. The overall means for the shirt ($M=2.6$) and trouser ($M=3$) fitted well.

Generally for Tailor E, the overall the shirt fitted well ($M= 3.3$) with the trouser also fitting well ($M=2.5$). The individual positions of the model shows that, the the shoulder to cuff position of the shirt fitted loosely ($M=4$) and the other two position showed a good fit (3). The trouser also had a loose fit (4) in the seat position while for the chrotch area the fit was tight (1).

Research Question Four: What are the issues identified with garment fit produce by the tailor?

The aim of this research question was to identify specific problems associated with garment fit for both the shirt and the trouser during the fit evaluation on the live fit model. Beyond the numeric fit evaluation, judges were required to indicate problems they found with garments of each tailor. These problems are the focus for this section. The tables and pictures below present the problems identified with the fit of the shirt and the trouser made by each tailor by the expert judges.

Table 14: Problems Identified by Judges with Tailor A's garment (shirt and trouser)

Fit problems identified	Yes	No
Wide armhole and loose sleeve	4	1
Collar not balance	3	2
Trouser too baggy	5	0
Trouser pockets wider	3	2
Shirt and trouser very loose	4	1
N=5		

Source: Field data, 2022

The Table 14 shows results of some fit issues that were identified with Tailor A's garments on the live fit model. For the shirt, four judges stated the armhole was too big thus making the sleeve also big, the shirt was also seen as loose by four judges and the collar not well balance by three of the judges. With the trouser, the problem of fit were bagginess (5 judges) and pocket too wide (3 judges).

Problems identified by model with Tailor A's garment (shirt and trouser)

The problems identified by the live fit model with regards to Tailor A's garment was that;

“The shirt and the trouser are too big on me. Even the shirt somehow looks better but the trouser is not just my size. The size needs to be reduced before it can fit me.”

Figure 9 provides an illustration of garments sewed by Tailor A on the live fit model

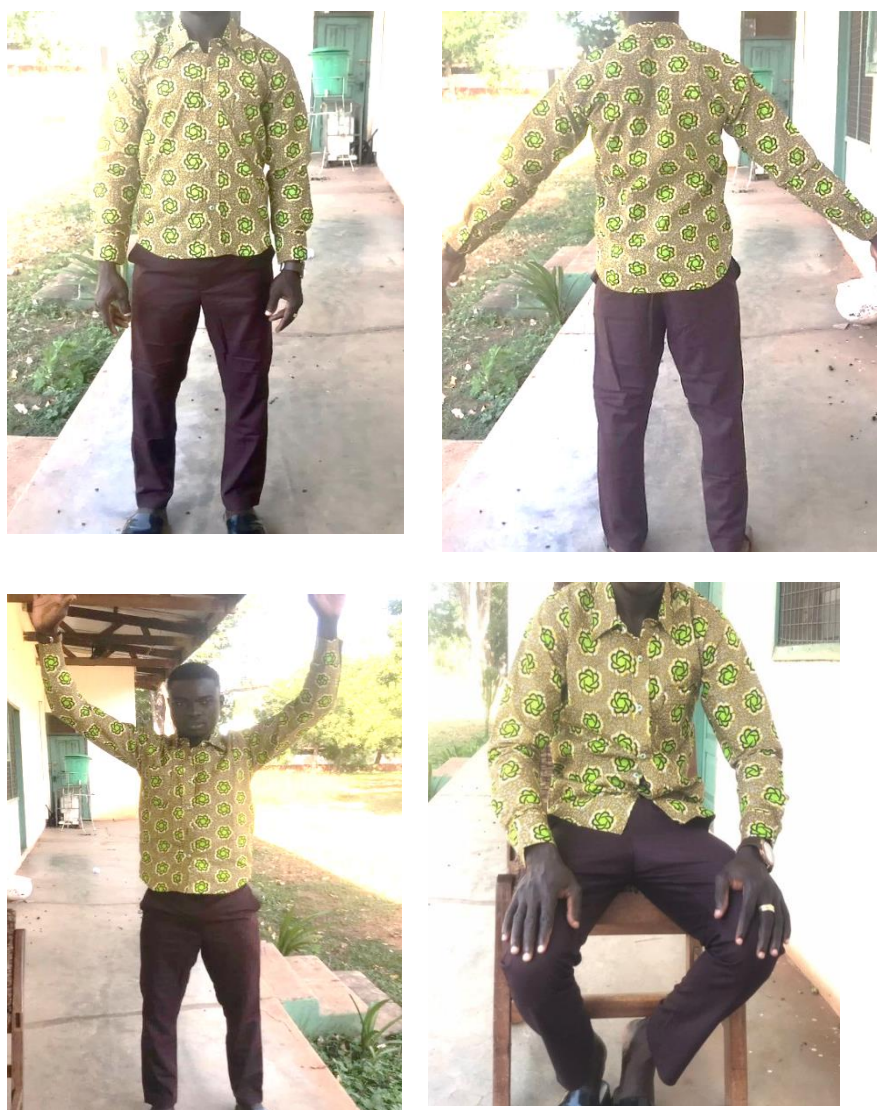


Figure 4: Tailor A garment

Source: Field data, 2022

Table 15: Problems Identified by Judges with Tailor B garment (Shirt and Trouser)

Fit problems identified	Yes	No
Shirt tight at the chest	4	1
Collar very high and short	3	2
Sleeves tight from elbow down wrist	5	0
Waist to crotch very tight	5	0
Trouser length short	3	2

N=5

Source: Field data, 2022

Additionally with Tailor B as presented in Table 15, results of some fit issues that were identified with garments on the live fit model included shirt being tight by four judges, three judges stated the collar was too high and short while all the judges stated the sleeve was tight from the elbow down to the wrist. For the trouser, all judges acknowledged a tight waist and crotch while three had problems with length being too short, making it look hanging on the model.

Problems identified by model with Tailor B's garment (shirt and trouser)

The model upon wearing Tailor B's garment identified certain issues which he stated that;

"This garment is very tight on me; my chest and the sleeves are tight especially the sleeve cuff. Also, the trouser waist and crotch is very tight, I believe this trouser will tear at the crotch area when I attempt running. The length is short too, I wanted it below my ankle, he should have asked me when he was taking the measurement, but he didn't."

Figure 10, show garments sewed by Tailor B on the live fit model



Figure 5: Tailor B garments

Source: Field data, 2022

Table 16: Problems Identified by Judges with Tailor C garment (Shirt and Trouser)

Fit problems identified	Yes	No
Small armholes and sleeve too short	4	1
Sleeve cuffs incorrectly fixed and balanced	5	0
Joins does meet appropriately	4	1
Waist and crotch tight, length short	3	2
Stitching lines not accurate	4	1
Imbalance back facing	5	0

N=5

Source: Field data, 2022

The Table 16 shows results of some fit issues that were identified with Tailor C's garments on the live fit model. With the shirt, four judges stated the armhole was too small thus making the sleeve also small and short. Also, sleeve cuffs were seen by all judges not being fixed correctly and imbalance as well with the back facing. The trouser waist and crotch were seen to be tightening the model and length was short (3 judges). In all, inaccurate stitching lines and joins not meeting accurately were identified with both the shirt and trouser.

Problems identified by model with Tailor C's garment (shirt and trouser)

The following issues were identified by the model when he wore the garment produce by Tailor C as;

“The armhole is tight on me, the sleeve not long enough and sleeve cuff is not fixed well and also tight. The trouser is worse; the waist is tight and crotch is also tight, and length is very short as compared to measurement that he took. Even it is not neatened and the excess fabric left for allowance are enough, he should have extended it using my measurement.”

Figure 11: Shows garments sewed by Tailor C on the live fit model



Figure 6: Tailor C garments

Source: Field data, 2022

Table 17: Problems Identified by Judges with Tailor D garment (Shirt and Trouser)

Fit problems identified	Yes	No
Shoulders long	3	2
Collar not balance on neckline	4	1
Fold on the back facing	5	0
Extremely tight sleeve cap	2	3
Very long crotch	4	1
Zipper flap cut and joined	5	0
Pocket very tinny	3	2

N=5

Source: Field data, 2022

Results of some fit issues that were identified with Tailor D's garments on the live fit model is presented in the Table 17. The judges spotted folds on the back facing, four stated the collar was not well balance on the neckline and three stating shoulders were long, leading to some folds created under the armpit. Also, sleeve caps were seen to be too tight to wrist (2 judges). Four judges saw the trouser crotch to be long in length, while three spotted tinny pockets. However, all judges acknowledge a cut and joined zipper flap halfway the flap.

Problems identified by model with Tailor D's garment (shirt and trouser)

The problems the model stated with regards to Tailor D's garment during the evaluation are;

“With the shirt; I can see fold on the back facing, I can't also use the first button because it is chocking my neck. There are folds under my armpit and my sleeve cuff is tight. In relation to the trouser, the pockets are tinny and I need to force my hands inside. The zipper flap is cut and joined and same mistake repeated on the waistband. I don't know if that is a new fashion.”

Figure 12 shows garments sewed by Tailor D on the live fit model



Figure 7: Tailor D garments

Source: Field data, 2022

Table 18: Problems Identified by Judges with Tailor E Garment (Shirt and Trouser)

Fit problems identified	Yes	No
Tight chest	3	2
Buttonholes not accurately cut and neatened	3	2
Front pocket not positioned accurately	4	1
Collar too high and short	4	1
Trouser loose from waist down to knee, but very tight ankle	5	0
N=5		

Source: Field data, 2022

The Table 18 shows results of some fit issues that were identified with Tailor E's garments on the live fit model. With the shirt, a tight chest, buttonholes not properly cut and neaten we identified (3 judges), a short, high collar and inappropriate placement of front pocket (4 judges). Also, all judges identified trouser waist to be loose down to the knee, but tight at the button width to the ankle. This problem compelled the model to wear a rubber on the feet before wearing and removing of trouser.

Problems identified by model with Tailor E's garment (shirt and trouser)

The model identified the following problems as those associated with the garment sewed by Tailor E as;

“The chest area looks a little tight, the buttonholes are not well neaten and buttons used will not be durable. the pocket size is small and placed too high towards my shoulder. The trouser waist and seat area is baggy, but the button width is small compared to my size as my foot cannot pass through. I need to wear a polythene on my foot before I can wear or remove it.”

Figure 13, shows garments sewed by Tailor E on the live fit model

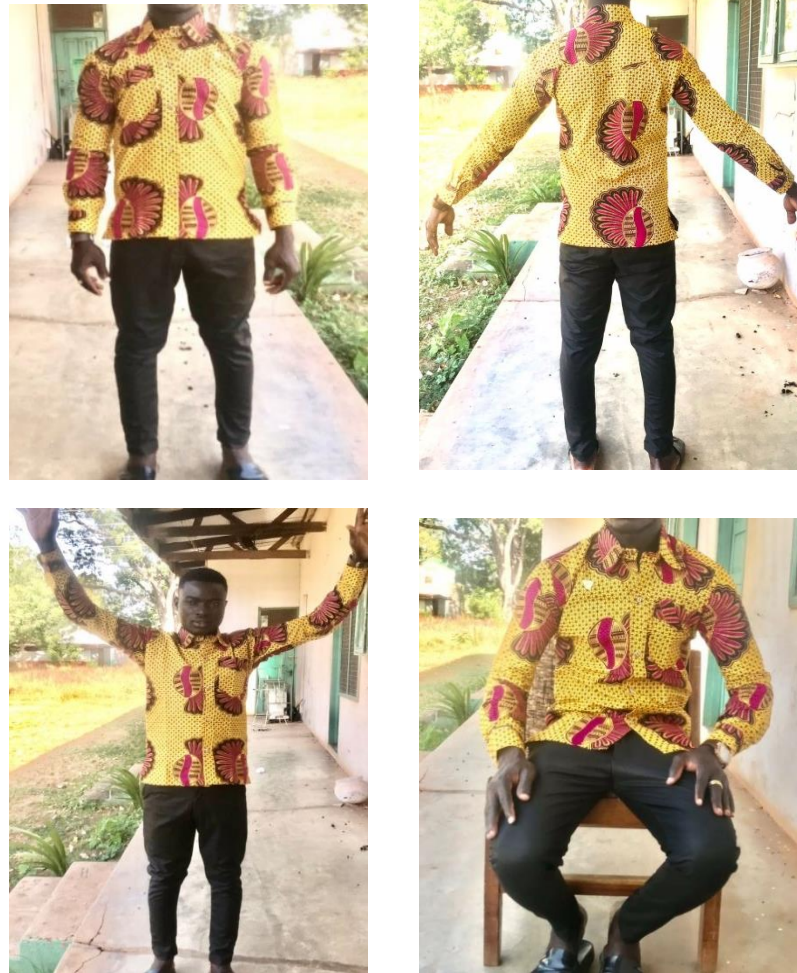


Figure 8: Tailor E garments

Source: Field data, 2022

Discussion

This study was aimed to access body measurement practices and how they are used for sewing by tailors in the Tamale Metropolitan assembly in the Northern region of Ghana. The findings of this study are discussed in this section.

Biographical Characteristics of Tailors

All the respondents (Tailors) received formal education to some extent. Two out of five tailors were university graduates who studied Social Change Communications and Early Childhood Education but received their training through apprenticeship and had their own clothing enterprises though the

programs studied are not related to clothing. NVTI, SHS and JHS had one respondent each completing those level but have all received apprenticeship training. This indicates that tailors have some formal education and apprenticeship experience in order to have a foundational understanding of how to take measurements and perform the necessary calculations to ensure that a client's garment fits them precisely.

At the time the study was conducted, the tailors who were used as respondents had operated their own established businesses as tailors for varying numbers of years ranging between 9 and 11 years. The findings shows that because the study's respondents have worked in the field for a while, they have the knowledge and expertise needed to offer the data needed for the study. Results from the study shows that, all the tailors learnt freehand cutting method and therefore it was the most common method used for cutting among the tailors. The results also shows that freehand cutting was the most often employed way of tailoring because it was taught to all of them. This finding is consistent with Forster and Ampong (2012) assertion that the freehand approach is the primary way dressmakers in Ghana cut out garments and that various dressmakers employ different techniques to cut the same pattern. This trained practice allows most freehand cutting tailors generates methods which enables them to conveniently cut out a style. Also, Martha (2014) observed that the mainly used method in garment construction in the formal sector is pattern making and that of the informal sector is direct cutting especially in simple set up enterprises.

How Body Measurements of clients were taken by tailors in Tamale

A well-fitting garment begins with accurate measurements. No matter how skilled you are as a tailor, getting a garment to fit correctly will be difficult if your body measurements are incorrect because they dictate the body's measurements that the clothing is designed to fit. When measuring someone to sew a garment, it is important for the client to wear the proper clothing, use the proper tools and equipment, find the necessary measurement spots, stand in the proper position, and take the measurement correctly.

Garment worn for measurement by client

According to Rudd (2001), a client must wear undergarments when having their body measured for tailored clothing in order to ensure that the finished product would fit, or measurements should be collected while wearing well-fitting base layers. It is important for the client to wear the proper clothing (under garment) during measurement taking because most garments are worn under a foundation garment. However, the results show all tailors took measurement on the casual cloths used by the client. This garment used by client may affect the final fit since they are already wearing a garment used by them. This procedure was not a surprise to the researcher because it is a common practice in freehand cutting, so they learnt that from their masters. Also, there is no privacy within these enterprises which is not morally right to tell a client to allow a client remove their top garments for measurement to be taken by tailors. All these may have an effect on the fit of the final garment.

Tools and Equipment

The most common measuring instruments used by tailors were a normal notebook, a pen and a tape measure. All tailors used 60inch plastic

tape measure, tailors chalk or black board chalk and pen or pencil in recording client body measurement though only one tailor had his tape measure new and enclose in a case worn around the neck, the rest had tape measures that were old and the numbers on it were not very legible. This could have an impact on accurate body measuring since a tape measure typically has to be flexible and have clearly defined numbers to enable accurate body measurement. Again, as the tape gets older the plastic may stretch or shrink thus affecting the accuracy of the measurements taken. Again, it is noted tailors and seamstresses have and use different measuring tapes in their shops. Sometimes they just call one of their apprentices to give them their tape as was in two of the respondents in this study. It is therefore unlikely that the tape used in taking measurement will be same tape used in cutting out. In such a case if there is inaccuracy in any of the two tapes it will affect the final dimensions of the garment cut. The equipment's needed to take measures according to Rudd (2001), is either a standard notebook or measuring tape, pencil, and paper. Inches and centimeters are typically marked on 60 cm long tape measures combined to make it easier to convert between units quickly. Flexible but not stretchy tape is ideal. To record the measurements, you need a regular notebook or pencil and paper.

Measurement points/locations on the body

Consistent body parts identifications are essential, according to Bye et al. (2006), to ensure precise measurements for the development of basic garment structure. In another narration, Yu (2004) claims that systematic techniques for body parts marking and recording will assist in contributing to an increase in the efficiency and effectiveness of the measuring procedure as

well as enhance the garment's fit. In taking measurement for any garment to be sewn, it is necessary to locate certain spots to ensure the right design and fit of the garment. For the shirt design for this study the measurements required are neck size, around chest, syce depth, across back, sleeve length, cuff size, shirt length. For a trouser the following measurement are required; trouser seat, trouser waist, trouser length, trouser bottom width, inseam measurement, crotch depth, thigh measurement. However, the study found out that only some of these locations were used by tailors which has the potential of affecting fit since all these are needed in the fabrication process.

Standing in the Proper Position

The position of the person taking measurement is of paramount to how well measurement can be taken on the client body. Martha (2014) and Rudd (2001) revealed that, the person stands on one side of the individual being measured. A person taking the body measurement ought to be on the right side of the client. However, findings from this study showed that tailors preferred to take measurements while standing in front of their customers or walking around him it was only tailor B out of the five tailors who used the correct position by standing at one side of the client while taking the measurements. This position taken by the tailors is likely as a result of what they learnt from their masters during apprenticeship. Standing at the side helps the tailor to easily synchronize the level of the tape measure on the client's body while measurements are being taken. It is however noted that stand is the side is convenient for horizontal measurement with vertical measurement however, the tailor should use a position that provides a clear view of the measurement being taken.

How body measurements were taken

Taking accurate body measurements is one of the keys to great fitting garment. Whether you choose to make your pattern block or free hand cutting techniques, having accurate measurements is critical to the success of a well-fitting garment. The body measurement practices as indicated by Aldrich (2008) notes the following procedures for the various measurements needed.

Shirt length: The tape measure is place at the bone at the nape of the neck to the required length.

Sleeve length: The tape is place loosely from the top of the shoulder down to the elbow and then to the wrist for a full sleeve length with the client arm beside him.

Chest: Measurement is taken whiles the tape place around the body at chest level and two fingers put inside between the body and the tape raised towards the armpit.

Across back: At the back of the neck, measurement is taken on the distance between the ends of the shoulder bones.

Waist: For the waist indent, the tape is wrapped around the body and parallel to floor on the natural waist below the belly with two fingers put within the tape and the body.

Trouser length: The trouser length is determined by measuring from the waistline down to a little below the ankle.

Trouser bottom width: This measurement is taken around the ankle by wrapping the tape around it in a loose manner.

Seat: Measurement is around the fullest part of the buttocks by wrapping the tape a little distance down the waistline.

Thigh: Measurement is taken by wrapping the tape around the area of the thigh loosely to match the shape of the trouser worn by the client.

Around arm: This is measured by wrapping the measuring tape around the arm between the armpit and the elbow of client with two fingers within.

Ankle: Measurement is done by wrapping the tape around the ankle a little tight with a finger inside to determine the measurement.

Measurement Taken for the Shirt by Tailors

According to Aldrich (2008), horizontal measurements should be taken with the tape parallel to the floor and close but not tight with two fingers in the tape. When the measurements are recorded, ease is added together with seam allowance during cutting out. In the taking of measurements by the respondents, however, only one tailor (TB) took the measurements without ease, while the other four claimed to have added ease during the taking of the horizontal measurements.

For Tailor A the measurement of the chest was taken with the tape around the chest at nipple level with the tape very loose and not close to the body with two fingers in the tape measure. So were the waist and seat measurements. When the researcher questioned why the fingers in the tape measure, they stated it is normal including the fingers when taking horizontal measurement to hold firm to the tape. They also claimed to be adding ease but this was difficult to determine by the researcher. The results indicated that for the same client, different measurements results were recorded by the four other tailors (TB, TC, TD and TE) whom all used the same procedure employed by Tailor A in the measurement taking process. For chest the measurement, the researcher recorded (TA=37, TB=36, TC=34, TD=38,

TE=35.5). Measurement on other parts of the body were also varied from tailor to tailor especially with shirt length (TA=27, TB=30, TC=27, TD=30, TE=28), across back (TA=19, TB=18, TC=18, TD=19, TE=17) and sleeve length (TA=24, TB=27, TC=26, TD=24, TE=26). None of the tailors took measurements for syce depth, and neck with one tailor each taking measurement for cuff size (TE=8). When questioned why they did not measure these parts, the tailors responded that “they had not been taught how to do so during their training or apprenticeship and that, with the exception of those who sew suits, measuring some of these parts are not particularly important when making casual clothing. So, it might be difficult for clothing manufacturers to identify and measure all parts of the body needed in garment production”.

These findings are in agreement with those of Strydom and Klerk (2006), who demonstrated that locating all parts of the body was identified as an issue with a number of metrics and that it is necessary for this problem to be handled, not only by the local industry but also by international organizations. However, as shown by Forster and Ampong (2012), tailors who cut freehand utilize less measurements when sewing. Hence, a tailor not taking full measurements demonstrates they trained in that manner, and as a result, they are not accustomed to using all parts of the body needed in taking measurement.

Measurement Taken for the Trousers

For the trouser just like the shirt, some measurements were omitted and where they were taken, there were variation from tailor to tailor. For the waist (TA=32, TB=30, TC=30, TD=31, TE=31), seat/hips were taken by only Tailor

B (36), the other four did not take measurement for this part claiming it will be shaped from the waist to the bottom width. Skipping the seat/hip by tailors may have an effect on cutting out the hip area of the garment and the final fit of the trouser at the hip. Trousers length recorded (TA=38, TB=38, TC=36, TD=36, TE=38). while none of the tailors took measurements for crotch, one tailor each took measurement for seat (TB=36), trouser bottom width (TA=14) and thigh measurement (TD=22). All these measurements that were not taken may lead to errors in the in the application process in cutting out because they are all required to ensure a proper application and fit. The researcher also asked why the variation in measurement for the same part on the client and was replied by Tailor E that, body measurement will always vary from person to person even if their trained by one master, because it cannot be precise. The different results for the body measurement including the horizontal results, indicate that the garment constructed may have different sizes and therefore varying fits for the model.

Measurement Application for Cutting out of Clothing

Body measurement are applied to cloth for garment cutting. This is a crucial step because it is at this moment that the garment's style and fit are realized. The procedures for applying measurement varied from tailor to tailor as observed by the researcher during the process despite the design being the same for all tailors. Nonetheless, all tailors arrived at the same garment design for the study. The findings revealed that tailors mark out garment design on the fabric and seam allowances were added to the actual body measurement.

The importance of adding ease to measurements can be seen in Branson and Nam's (2007) findings, which state that a garment without

enough wearing ease will strain, wrinkle, pull, and bind uncomfortably against the body, emphasizing body contours that may not be aesthetically pleasing and may result in problems with garment fit. Different garment designs include ease in different ways. That is, the degree of ease supplied to movable sections or joints of clothes is different from that in hem areas. Ease is usually added to horizontal measurements. Myers-McDevitt (2004) recommended adding a specific amount of ease to clothing based on the garment design. For example, he suggested adding 2 to 4 inches of ease to the chest/bust, 2 to 3 inches to the seat/hip, and 2 to 3 inches to the armhole for fitting clothes. However, despite these recommendations, the researcher could not determine whether tailors added less or more ease to the clothing or took into account all the necessary sections, such as the chest, waist, crotch, and hip/seat, as specified by Myers-McDevitt. The tailors claimed to have added ease during the measurement-taking process, but the researcher could not confirm the accuracy of these claims since it was assumed and added.

In cutting out a shirt generally the ease and seam allowance are included prior to marking out the outline of the shirt on the fabric. The tailors, except one noted they included the ease while taking the body measurements. The seam allowance for the side seam especially was added during the marking out of the garment and this ranged between 0.5-3 inches. It should be noted that for shirts generally the recommended seam allowance is at most half an inch. Various body measurements are then used to outline the different sections of the shirt for cutting out. In an outline by Aldrich (2011) for cutting out the body of casual shirts for adult men, the following are noted: The chest and length measurements are used for the drawing a rectangle within which

the outline of the shirt is drawn. The armscye depth determines the depth of the armhole. The across back measurement is used to draw in the across back and then the across shoulder is projected from the across back by about half an inch. The neck measurement is used to cut out the garment neckline in front. The sleeve length measurement is used to determine the sleeve length while the cuff measurement cut the width of cuff. The results of the study however points to the fact that some of these measurements needed for cutting out were not taken. The measurements for the shirt body that were not taken by the tailors are scye depth, cuff and neck. The study indicated that, in cutting out the neckline and armhole the measurements used were standards probably learnt during apprenticeship. The other measurements were however applied properly in cutting out the shirt. The accuracy of the dimensions of the shirts are however in question since the taking of the horizontal measurements, which determine whether a shirt is too tight or too loose, are questionable. It is however noted that as pointed out by Forster and Ampong (2012) in free hand cutting the number of measurements taken are less than those used in pattern making. The few measurements should however be used in cutting out a garment that provides a good fit.

When cutting out a trouser generally, the ease and seam allowance are included prior to marking out the outline of the trouser on the fabric just like the shirt. All tailors claim to have added ease while taking the body measurements except for one tailor. Seam allowance used by the tailors for the trousers ranged from 0.5-3 inches. However, half an inch is at most the recommended seam allowance. Different body measurements are needed to outline the different sections of a trouser for cutting out. The waist

measurement is the most significant indicator of size when it comes to trousers. Hence it was used to cut the waist and length measurements are used to determine client full length. The crotch measurement is needed for the crotch curve to accommodate the length, width and depth of the crotch area. The seat/hip measurement is used to determine the largest measurement around the widest part of your hips. The knee and bottom width measurements are all needed to ensure the trouser is well shaped from waist down to the length accurately. However, the study found out that some of these measurements needed for cutting out were omitted. These included crotch depth, seat/hip, knee and bottom width. The other measurements were however applied properly in cutting out the trouser outfit. Many body measurements are important to building a balanced, well-fitting garment. Therefore, by using accurate measurements, the trousers will not be baggy or too tight. Hence, omitting some of these measurements may lead to questions about the accuracy in dimensions of the trouser.

Fit Evaluation of Garment Produced by Judges

Regardless of how excellent measurement and construction procedures undertaken to sew a garment, it becomes too unrealistic if the clothing does not fit the client's body adequately. Garments that do not fit well are either returned to the tailor or never worn. Fit evaluation of the shirt and trouser by the judges on the model in various positions as in sitting, standing, walking, when arms are raised above the head, fit around the chest area, armhole area, shoulder to sleeve cuff, seat area and crotch area were the criteria used for evaluation. Apawudza (2021) used a five-point rating scale, with 1 being extremely tight, 2 being somewhat tight, 3 being a good fit, 4 being mostly

loose, and 5 being extremely loose. However, for analysis purposes, the following categories were used: 1-2.4 = tight fit; 2.5-3.4 = good fit, and 3.5-5 = loose fit.

The overall means for the fit of the various positions evaluated on shirt by the judges for all the tailors were recorded as TA (M=3.4), indicating a good fit; TB (M=2.7), showing a good fit; TC (M=3.4), implying a good fit; TD (M=3.1), implying the shirt had good fit, and TE (M=3.2), indicating the shirt had a good fit. However, the live fit model evaluation recorded a good fit for TB (2.8), TC (3), TD (3.2) and TE (3), a tight fit for TA (3.8). In contrast to the shirts, the evaluation of the trousers by TA recorded a loose fit (M=3.9), TB (M=2.3) indicated a tight fit, and TC (M=2.0) also had a tight fit, while TD (M=2.7) and TC (M=2.9) indicating a good fit. The model's evaluation recorded a loose fit for TA (4.7) and TE (4), TB (2.3) and TC (2.0) recorded tight fit, while TD (3.3) was the only tailor that recorded good fit.

With regards to fit of garments for selected parts around the chest area, armhole area, shoulder to sleeve cuff (shirt only), seat area and crotch area (trouser only). The shirt overall means for fit recorded good fit for TA and TB (M=2.6 and 3.0) respectively. However, TC(M=3.6), TD(M=3.5) and TE(M=3.5) had loose fit. The trouser recorded loose fit for TA (M=3.9), TE (M=3.2) and TD (M=2.8) indicating a good fit while TB and TC had an evaluation score (M=2.3 and 2.1) implying the fit was tight. In contrast to the evaluation made by judges, the live fit mode evaluated a loose-fitting garment for TA (M=4) and TD (M=3.6), while TC (M=2.6) and TE (M=3.3) recorded a good fit, only TB (M=2.3) was evaluated to be tight fitting for the shirt. The model however, score TB (M=2.5), TD (M=3) and TE (M=2.5) as good

fitting, TA (M=4) as loose fitting and TC (M=2) indicating a fitting was tight for the trouser.

The inability of tailors to take and apply measurement of all body parts might cause some of the issues of inconsistency with the fit results. For the shirt, measurements for neck, cuff, armhole were omitted resulting to the shirt having tight or loose fit around these areas after the garment was completed. However, Anikweze (2013) posited that well-fitting clothes should not only appear gorgeous on the wearer but, should offer comfort whether the wearer is standing, sitting, walking or bending and also fit in motion. With regards to the trouser, tailors omitted crotch depth, bottom width, seat/hip, with the amount of ease they decided to add, resulting in a fit that was too tight or too loose, particularly from the waist to the crotch and bottom width areas. Since the measurements were incomplete, and landmarks were not accurately sketched on the fabric, the shaping during cutting might not be accurate, resulting in either a loose or tight fitting trouser. For tailors not taking full measurement of client for garment to be sewed is in accordance with Forster and Ampong (2012) positing tailors who cut freehand utilize less measurements when sewing. The results of this study seem to point to the fact that either the few measurements were not applied properly or the tailors need more measurements in cutting out to be able to cut out garments that will produce a well fitted garment.

In a study done by Swinker and Hines (2006), it was found that there was a high demand for garments that were fashionable and had a good fit. However, the evaluation revealed that, the judges could not rate the shirts and trousers as having good fit. The completed garments had very loose or tight

armholes and tight sleeve cuffs probably depending on the standard or guessed measurement applied by a particular tailor. The researcher observed that although the tailors said to have added 2-3 inches as allowances, the stitching process was not in accordance with the allowances added. They were either less or more, which will not appropriately achieve good fit. Sawyer's (2019) asserts that a well-fitted garment begins with accurate and adequate measurements. No matter how skilled a tailor is, getting a garment to fit correctly will be difficult if the body measurements are incorrect and inadequate.

Problems Identified with Garments and their Fit by Judges and Fit Model

Upon evaluating the tailors' work, the judges and live model identified some common issues across the majority of the outfits. The trouser from Tailor A was too baggy from the waist to the bottom width, while the shirt was loose except for the tight sleeve cuffs, indicating a loose fit overall. For TA, these issues could be a result of the tailor's failure to take and apply wrist measurement and not add appropriate ease. Similarly, Tailor B's shirt had tight sleeves, a short and high collar. The trouser was tight from the waist to the crotch area. TB problems could have arisen as a result of tailor omitting the cuff, seat and crotch depth measurement. Also, Tailor C's clothing had small armholes and short sleeves, leading to folds under the armpit and incorrectly fixed sleeve cuffs that left a dented spot on the right sleeve. The chest area was loose, the joints did not meet accurately. The trouser was tight at the waist and crotch areas and a length that hung above the ankles. The tailors' poor measurement and application procedures before cutting and sewing might have caused these issues. The armhole and sleeve cuff problems

could have resulted from shaping the armhole and joining techniques as well as omitting measures of these areas.

Regarding the garments made by Tailor D, there were issues with the shoulders being long, visible folds on the back facing, and tight sleeve cuffs. The trousers had a long crotch, poorly joined belt holes and a flap for the zipper that was not cut and joined properly. These problems may have arisen due to the tailor's inability to recognize the importance of accurately measuring and shaping garment parts during cutting. Similarly, the clothing made by Tailor E had issues with chest area being tight. The front pocket was not well positioned, the cuffs of the sleeves were tight, and the joints did not regularly meet at right angles. The collar was also too high and short. The trouser was loose from the waist down to the knee but very tight at the bottom width. The tight bottom width made it difficult for the model to put on or take off the trouser unless he wore polythene on their feet for assistance. These issues may be attributed to the tailor's failure to correctly take full body measurements and apply for the necessary eases.

The measurements generally omitted by the tailors include neck, around arm, armhole dept and cuff for shirt. For the trouser the crotch dept and seat/hip were omitted. Omitting these measurements which have been noted to be important in cutting out different sections of the garments could therefore be the causes of the anomalies found in the fit of a garment in certain sections of the garment and the overall fit of the shirt and trouser. Again, in taking the measurements most of the tailors just guessed the amount of ease that should be included in the garment and added that while the measurements were being

taken. Even the one tailor who claimed he added the ease during cutting could not define the amount of ease for different sections.

These findings support the claim made by Strydom and Klerk (2006) that the absence of a general agreement regarding body measures is likely the cause of many problems that are currently present with clothing design. Ultimately, a well-fitted garment is essential for consumer satisfaction. A properly fitting garment should have straight seams, appropriate dimensions, no gaping, no body constriction, and enough ease for movement. It should drape evenly and smoothly over the body without any pulls or fabric distortion, and it should not restrict the body in any way (Evidhya, 2019). The difference in the fit of the garments between the judges and the model could be as a result of the physical form and physical attributes of the garment.

According to Brown and Rice (2014), the finish, design, materials and construction of a garment determine its physical form and physical attributes. These characteristics are also a component of what makes a garment what it is, thus if they were altered in any manner, it might alter the garment's quality and how people perceive it (Brown & Rice, 2014). For Shields (2011), the process of making a garment (style and fit), the fabric, and the way it is cared for all have an effect on its natural qualities, such as texture or colour. Even though they are used to judge the quality of a garment, intrinsic attributes appeal to different customers in different ways (Aqueveque, 2006; Brown & Rice, 2014; Abraham-Murali & Littrell, 1995). This means that a garment is thought to be of good quality when its natural qualities appeal to a specific consumer.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Study Summary

This study assessed how tailors in Tamale Metropolitan Assembly in the Northern Region of Ghana measured clients' bodies for clothing production. It also evaluates the body measurement techniques used by tailors, their application of measurements during garment construction and the clothing's fit on a live model in order to identify fit-related issues in the male clothing industry. The study looked at how body measurements were taken by tailors and the techniques involved, how these measurements were applied during garment construction, how the clothing's sewed by tailors fit on a live model and what fit related issues are identify in the male clothing industry. Five male tailors who solely manufacture garments for men and are registered members of the Ghana National Dressmakers and Tailors Association in the Tamale Metropolitan Assembly were selected for the study using a purposive non-probability sampling technique. The research employed the Fit Evaluation Index, a semi-structured interview guide, and an observation checklist/guide as data collection instruments. SPSS version 22 was used to examine the research data, which included descriptive statistics such as frequencies and percentages, means and standard deviation, and theme analysis.

Summary of Findings

The background of the tailors revealed that, all participants had some type of formal education ranging from JHS, SHS, and NVTI (grades one and two) and the university as well. The results also show participants had operated for a number of years in their own setup enterprises. It was found that

though some tailors had knowledge in pattern cutting, they acquired freehand cutting through apprenticeship, making freehand cutting the most widely utilized technique in Tamale. Tailors utilize notebooks, tape measures, pens or pencils and chalk to take and record body measurements.

On the question of taking body measurements, the study reveals that most of their measuring tapes were old, stretchy, and had less visible numbers. Tailors interacted with their clients during the body measurement process. In addition, the majority of tailors were observed standing in front of their clients during body measurements, as opposed to standing beside them. Also, majority of the tailors did not take the complete measurement, emphasizing that some these measurements omitted are only required when drafting patterns and not relevant when cutting with free hand.

When it comes to the application of measures for garment production, tailors preferred adding ease to the actual body measurement and marking out specific landmarks on the fabric. The analysis also revealed that the style line was marked before the cutting, and that the seam allowance was added by the tailors to the actual measurement in varied amounts before it was applied to the fabric. The shirt bodices, sleeves were marked out and cut using client's body measurements but the collar, yoke, cuff and pockets were cut using a guessed measurement. Also, the outline of the trouser was also marked out on the fabric and though some measures were omitted, tailors were able to successfully cut out the design.

Regarding fit evaluation of garment on the live fit model by judges, most of the sections evaluated while the tailor was in motion (sitting, standing, walking and raised arms) and certain parts of the body used (chest area,

armhole area, shoulder to sleeve cuff, seat area and crotch area) were either loose or tight fitting. The judges and live fit model evaluation of garments produced by the tailor showed that tailors performed better with the shirt than the trousers in terms of fit. In the light of the problems identified with the garments, the result revealed some problems associated with the various tailors' finished garment. The issues that were found with Tailor A garment revealed in the results were; a wide armhole and loose sleeve, an imbalance collar, a baggy trouser with wide pockets and an entirely loose shirt and trouser was observed by the judges. Also with Tailor B, there were issues with shirt being tight at the chest, collar being very high and short, sleeves tight from elbow down wrist, waist to crotch very tight and trouser length being short. Tailor C garment armholes were too small and the arms were also excessively short. The sleeve caps had been incorrectly fixed, leaving a dented spot on the right sleeve, the chest area was very loose and joins did not meet appropriately. The trousers were very tight and stitching lines were not accurate and length hanging above the ankles.

For Tailor D garments, the shoulders were long and joints between the neckline and collar as well as sleeve were not balance, folds were seen rear on the back facing and extremely tight sleeve cap. The trousers had a very long crotch, belt holes not well joined and flap for the zipper was cut and joined. Additionally with Tailor E, the chest was excessively tight, and the shoulder-to-shoulder length was too long, buttonholes not accurately cut and neatened. Front pocket a not well positioned and sleeve cuff very tight. The collar was high and short. The trouser was loose from the waist to down to knee but very tight at the bust making it difficult for the live model to wear and remove as

well. This challenge compelled the model to wear a polythene on the foot to aid the wearing and removal of the trouser.

Conclusions

This research highlighted measurement procedures utilized by male garment manufacturers in Tamale when sewing a custom-made shirt and trouser for their customers, as well as the effect these practices have on garment fit in Tamale. The fit of a garment is the relationship between the human body, its dimensions and its shape. To achieve perfectly fitting clothing, taking measures according to the garment's design is required. The correct body parts must be located by tailors and noted. Taking the correct measurement is vital in the clothing production process to achieve good fit. However, the procedures used by the tailors for taking measurement was faulty and as this measurement were transferred to the cutting out of the garments were also not cut out with much precision. The end result of the shirts and trousers produced by the garments did not have very good fits.

To create a well-fitting garment, body measurement techniques must be properly implemented during the garment-making process. Though tailors did not effectively apply all the measurements needed for the production process by omitting some measures that are paramount in garment production, they strive to obtain the best possible fit for their clients to encourage comfort and confidence in their brand. This is an indication that, tailors are trained in this manner and regardless the measurement omitted, they will ensure the garment produced possess the features of the design and client. However, it is evident from the expert judges and the fit model evaluation that garments sewed by tailors were loose or tight at certain areas such as crotch, armhole,

neck, cuff, seat and bottom width which might be as a result of these measurements that were omitted as they were needed at various sections of the garment.

Problems realized by judges on the garments made by tailors were included a loose or tight sleeve cuff, armhole, crotch and seat areas as well as bottom width area of the trousers. These are common in many customized made outfit in Ghana which most clients on the regular basis will send back to tailors for proper fitting.

Recommendations

The following recommendations have been made base on study's findings and conclusions:

1. The study found that tailors did not take all necessary measurements, and many were taken improperly, likely due to incorrect techniques passed down from master craftsmen to apprentices. It is recommended that vocational training institutions and tailoring associations develop and implement improved measurement procedures in their curriculum. They should conduct refresher courses for master tailors to ensure the correct techniques are being taught to apprentices.
2. Achieving a good fit in garments requires accurate identification and measurement of specific body points. Tailoring workshops and training organizations should incorporate training sessions focused on identifying body landmarks accurately. They should utilize charts and diagrams of human anatomy with well-labeled landmarks to guide tailors during workshops and seminars. This will help ensure that

tailors can consistently achieve the correct fit for various garment styles.

Research Ideas for Future Studies

1. Research should be conducted to assess the measurement procedures for particular types of clothing, such as kaba and slits, dresses, and outfits for special occasions, among others. The research's findings would make it easier to pinpoint particular fit issues that customers have with various clothing categories.
2. Research should be done on how ready-to-wear clothing is made. The results of this study would assist determine whether ready-to-wear clothes have the same problems as custom-made clothes because ready-to-wear clothes have become a staple in Ghana's fashion sector as a result of globalization.
3. A comparative study could be conducted between garment makers who learnt their trade at tertiary institutions and those who learnt their trade through apprenticeship using the same parameters as were used in this study.

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APPENDICES

APPENDIX A: RESEARCH INSTRUMENTS

**UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION**

This interview schedule is designed for academic purpose only as part of the requirements for the award of Master of Philosophy Degree in the University of Cape Coast. The research topic is “**Body Measurement Practices and Garment Fit among Male Garments Producers in the Tamale Municipality**”. Your consent and help is being sought to enable the researcher carry out this exercise for the betterment of the Fashion Design and Technology Industry in the country. All information provided by you in this exercise will be strictly confidential and used for academic purposes only, and no information will be disclosed without your consent.

Section A

Name

Name of Enterprise

Years of operation

Age.....

Highest educational level

Type of skill training received.....

Method of cutting learnt

Section B

Objective one: How do tailors in Tamale Metropolis take body measurements of their clients?

Measurement format used.....

Tools and materials

Attire for measurement taking

Interactions with clients’ while taking body measurement.

Standing position of clients and designer.....

Correct identification of landmarks on the body.....

Observation Checklist for Number of Landmarks Measured**NUMBER OF LANDMARKS MEASURED**

Parts of the body	Measurement (inches)
Bodice Measurements	
1. Neck size	
2. Chest	
3. Scye depth	
4. Back to waist length	
5. Half back	
6. Across back	
7. Sleeve length	
8. Cuff size	
9. Shirt length	
Trouser Measurements	
1. Seat/Crotch depth	
2. Trouser waist	
3. Trouser length	
4. Inseam measurement	
5. Trouser bottom width	

Section C

How do tailors apply measurements in cutting out and constructing male garments?

Observation guide for application of body measurement for garment construction.

Cutting method and tools

Units of measures.....

Marking of landmarks on fabric

Adding of ease

Method of applying vertical, horizontal and circumference measurement.....

Marking out design on fabric.....

Hem allowance.....

APPENDIX B: MODEL FIT EVALUATION INDEX

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

This interview schedule is designed for academic purpose only as part of the requirements for the award of Master of Philosophy Degree in the University of Cape Coast. The research topic is **“Body Measurement Practices and Garment Fit among Male Garments Producers in the Tamale Municipality”**. Your consent and help is being sought to enable the researcher carry out this exercise for the betterment of the Fashion Design and Technology Industry in the country. All information provided by you in this exercise will be strictly confidential and used for academic purposes only, and no information will be disclosed without your consent.

Objective three: How well are clients satisfied with the fit of the garment produced by tailors?

MODEL FIT EVALUATION INDEX

Prototype: A B C D E (circle the prototype label)

Instruction: Please tick [✓] the box write the number that corresponds with your choice of response concerning each question.

1 Extremely Tight, 2 Somewhat Tight, 3 Neutral, 4 Mostly Loose, 5 Extremely Loose

A. Describe the fit of the garment while:	1	2	3	4	5
1. Sitting					
2. Bending					
4. Arms are raised above the head					
5. Walking					
B. Describe the fit of the garment across the:					
5. Chest area					
6. Armhole area					
7. Seat area					
C. Describe the fit of the garment in the area between:					
8. The shoulder to sleeve cuff					
9. The waist and the seat					

APPENDIX C: INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION
DEPARTMENT OF VOCATIONAL AND TECHNICAL EDUCATION

Direct: 03122-99210

Telegrams & Cables: University, Cape Coast

University of Cape Coast
Cape Coast

Our Ref: VTE/IAP/V.3/89

9th February, 2023.

The Chairman
Ghana National Tailors and Dressmakers Association
Tamale

Dear Sir,

INTRODUCTORY LETTER

We have the pleasure of introducing to you **Mr. Abdulai Yimbohi Lansah** who is an MPhil student of this Department with the registration number ET/HEP/20/0027 and working on the thesis topic *“Body Measurement Practices and Garment Fit among Male Garment Producers in the Tamale Metropolis”*.

Currently, he is at the data collection stage of the thesis, and we would be most grateful if you could give him the necessary assistance to enable him proceed with the collection of data.

Thank you.

Yours faithfully,

Dr. (Mrs.) Patience Danquah Monnie
HEAD OF DEPARTMENT

APPENDIX D: ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

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7TH FEBRUARY 2023

Mr Abdulai Yimbohi Lansah
 Department of Vocational and Technical Education
 University of Cape Coast

Dear Mr Lansah,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2022/72)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research on **Body Measurement Practices and Garment Fit among Male Garments Producers in the Tamale Metropolis**. This approval is valid from 7th February 2023 to 6th February 2024. You may apply for a renewal subject to the submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit a periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Kofi F. Amuquandoh

Ag. UCCIRB Administrator

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