

Usage of Free-Hand Cutting and Patterns in Garment Construction in Ghana

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Abstract

Ghanaians now demand better products as they have difficulties with the fit of garment made by their informal dressmakers and tailors. The study aimed to determine the appropriate method for garment construction. The study focused on registered roadside dressmakers, tailors, fashion designers and fashion students in Ghana. A sample of 302 respondents was selected using multi-stage sampling technique. Questionnaire was used to gather information. The results showed that garment made with pattern fits better as compared to freehand cutting. It was concluded that garment constructed with both freehand cutting and patterns brings out the perfect fit of garment. It was recommended that Ghana National Tailors and Dressmakers Association should encourage and train their members on the use of patterns, and this would improve and manifest in the high standard on fit of garment.

Keywords

Garment Construction, Freehand Cutting, Pattern Making, Dressmakers, Tailors, Fashion Designers

1. Introduction

Garments are of great importance to all human beings (Forster & Ampong, 2012) as they serve as powerful tools for self-expression, cultural representation, and social cohesion (Gaillard & Jobke, 2022; Tajuddin, 2018). Garments for men and women are made from materials including fabrics. These can be achieved through the use of patterns or the use of freehand cutting. According to Obinim and Pongo (2015), freehand cutting and pattern remain the bedrock of ways

of designing garments in the fashion industry which come with variances of fit and modifications of style. The use of freehand cutting to make garments is an initial step in garment making (Bakker-Edoh, 2018). This is because it allows designers to unleash their creativity and experiment with unique shapes and silhouettes (Bakker-Edoh, 2018). It serves as a platform for innovative designs that may be hard to achieve through rigid patterns (Bakker-Edoh, 2018; Antiaye, Biney-Aidoo, & Oppong, 2013). Also, free-hand cutting is a method of cutting a style of garment directly on the fabric without the use of a pattern (Bakker-Edoh, 2018). Shailong and Igbo (2009) described freehand cutting as a method of cutting the fabric marked with chalk based on the body measurements and cut directly without the use of a paper pattern. However, the measurement of the individual is utilised directly on the fabric in freehand cutting. The fabric may be wasted when using the freehand cutting as it is common to make a mistake.

The use of patterns is an initial stage in garment making. It is a craft that has evolved over centuries into a skilled technical process. Today, patterns have been designed to quickly perform repetitive time-consuming tasks, which have allowed garment manufacturing companies to keep pace with the fast-moving world of fashions (Tamakloe, 2011). Aldrich (2014) indicated that patterns are needed in dressmaking in order to obtain a better fit and to save material. Aldrich further justifies the use of block patterns in the garment industry because the blocks are constructed to standard (average) measurements for specific groups of people but could also be drafted to fit an individual figure using personal body measurements.

A pattern is achieved through the use of actual measurements of the person concerned and this results in a piece of paper drafted and cut to shape and subsequently used for sewing garment (Ekumankama & Igbo, 2009). Seemingly, the informal dressmakers and tailors in Ghana do not put much emphasis on body measurements and steps taken in measurements which leads to poor garment fit. Free-hand cutting does not employ patterns and it is achieved by coming out with a style of the garment cutting directly on the fabric (Shailong & Igbo, 2009). The option of freehand cutting or pattern method to make garment may affect the end product. The problem is that, particular technique, either the pattern or the free-hand cutting is more suited to a specific garment fit and clients' requirements, yet, most of dressmakers and tailors in informal dressmaking industry seem not well versed in both techniques (Omoavowere & Gloria, 2011).

Garment construction on the Ghanaian market is mainly free-hand cutting-based but pattern making becomes necessary when the design is complicated and using free-hand cutting will not provide the desired fit (Forster & Ampong, 2012). As per Forster and Ampong, most informal dressmakers and tailors are not aware of the inaccuracy of garment sewn with the free-hand method. As a result, the informal dressmakers and tailors prefer freehand cutting to pattern making which seems faster to them, while the formal dressmakers prefer the use of pattern which does not pose a lot of problems in terms of fit for their clients

when the garment is made. Nowadays, a lot of Ghanaians prefer ready-to-wear clothes due to poor garment construction from some tailors and dressmakers that use freehand cutting. Clients now demand better products as they have difficulties with the fit of garment made by their informal dressmakers and tailors (Dove, 2016).

Recognizing the critical role that the method of garment construction plays in the outcome of garment fit, the focus of this study is twofold: freehand cutting skills and pattern-making skills. Each technique carries its own set of implications, influencing the fit, style, and overall satisfaction of the wearer. As Ghanaians increasingly seek better quality and improved fit in their garments, understanding the consequences of these construction methods becomes paramount. This study delves into the intricate interplay between freehand cutting and pattern-making skills, aiming to unravel the impact they have on the construction of garments, ultimately shaping the preferences and choices of discerning consumers in the vibrant fashion landscape of Ghana.

2. Literature Review

2.1. Theoretical Framework

The study was anchored on skill-based acquisition theory. The basic claim of Skill-based Acquisition Theory, according to Dekeyser (2013) is that the learning of a wide variety of skills shows a remarkable similarity in development from initial representation of knowledge through initial changes in behaviour to eventual fluent, spontaneous, largely effortless, and highly skilled behaviour, and that this set of phenomena can be accounted for by a set of basic principles common to acquisition of all skills. According to Speelman (2005), skill acquisition is a form of learning where skilled behaviour can become routinised and even automatic under some conditions.

According to Chapelle (2009), this theory falls under the category of general human learning; it focuses on the use of freehand cutting and pattern making learning as a process of human learning. In other words, integrating of freehand cutting and pattern making by dressmakers in view of such theories is considered to be like learning any other skill. Advocates of such theories consider practice to play the key role in learning. Fashion encompasses both the fashion object and the fashion process. Fashion process is a mechanism by which future fashion items travel to a popular recognition from their point of origin (Aklamati, Twum, & Deikumah, 2016; Aboagyewaa-Ntiri & Apreku, 2012). Therefore, fashion designers can efficiently communicate their designs to the buyers, merchandisers, and marketing team through drawing designs.

2.2. Garment Construction

Garment construction is a comprehensive concept that encompasses the entire process of creating a garment, from the initial design idea to the finished product (Shubham, 2022). In garment construction, a technical accomplishment is

achieved, demanding the application of knowledge and skills in basic sewing techniques—such as the application of stitches, seams, darts, gathers, pleats, and edge finishing. The necessity for the appropriate application of the techniques in garment construction is emphasized, ensuring the creation of a product of good quality (Azuah & Soyeh, 2022). An attractive garment, when produced, will be characterized by a well-fitted form, and meticulous attention is bestowed upon its finer details (Azuah & Soyeh, 2022).

According to Satiya (2017), both technical and design issues are encompassed within the domain of garment construction, where the construction of lines—be it pockets, collars, plackets, sleeves—and the decisions on how to finish edges, produce volume, and structure, are left to the discretion of the designer. The manifestation of a good look and a gratifying experience for the wearer hinges on these choices (Bigson, Awuyah, & Nyante, 2019; Satiya, 2017). Within the foundational principles of garment construction, three key aspects are embraced: function design, structural design, and decorative design.

At times, with clothing and garments, the separation of design and fit is deemed impossible (Bigson et al., 2019). The prime objective of a garment is that it should be felt comfortable, offering adequate room for movement while still maintaining its shape or form. In the selection of fabric, emphasis is placed on choosing material of a suitable weight and appropriateness for the garment, forming an inseparable link between the materials chosen and the method of construction (Bigson et al., 2019). The symbiotic relationship between these elements is acknowledged. Functional design, centered on appropriateness, is a facet that deals with how the garment physically works and performs (Shubham, 2022).

The structure of a garment plays a very important role, encompassing everything that binds the garment together. This includes the fabric, seams, shaping, and all elements between the outer fabric and the interior (Shubham, 2022). Several different elements are incorporated, dependent on the desired look to be achieved. A garment that has been meticulously made and impeccably finished will exhibit enhanced durability over time, and it will sit more gracefully on the body (Azuah & Soyeh, 2022).

Decorative design, typically associated with surface finishes, is often captivating and draws attention to a garment (Shubham, 2022; Azuah & Soyeh, 2022). Elements such as buttons, bows, trim, embroidery, prints, patterns, and colors contribute to this decorative surface. These embellishments can be paired to either enhance or subvert a design. While their purpose may be primarily decorative, it is always a carefully considered aspect (Azuah & Soyeh, 2022).

In essence, garment construction is a dynamic and multifaceted process that combines technical skills with creative vision. It involves a seamless integration of design, pattern making, fabric selection, and meticulous craftsmanship to bring a designer's vision to life in the form of a wearable and aesthetically pleasing garment.

2.3. Garment and Fashion Industry

The garment industry is an end-user industry from the perspective of the textile complex and it is made up of product development processes such as cutting, sewing, constructing and marketing (U.S. Department of Labor, 2016). The garment industry can be seen as a sewn-product industry which includes all stages of garment production, sewn interior furnishing products (draperies and linens), luggage, awnings, and sewn toys. The need to use clothes for various reasons is the basis of the garment and fashion industry. Fashion industries are currently among the largest and fastest growing industries and have become a powerful force economically (Aboagyewaa-Ntiri & Apreku, 2012). Clothes are used for various reasons but mainly for protective, decorative, modesty purposes (Amander, 2012).

Mackinney (2012) indicated that clothing is worn in most communities for protecting the body against harsh weather conditions such as intense heat, heavy rain, cold and precipitation. According to Obinnim and Pongo (2015), there were a lot of changes in the fashion industry after the Second World War which resulted in more youthful styles and changed the focus of the fashion industry. Hodges and Karpova (2009) supported this assertion by maintaining that the fashion industry has continually been shaped by the global forces turning it into a more complex and far-reaching phenomenon. After the 20th century, advances in technology such as availability of sewing machines, rise in global capitalism and the development of the factory system of construction, has brought about mass construction of clothing in standard sizes.

Clothing, beside food and shelter, has been recognized as the most basic necessities of people all over the world. Clothing is one of the essential needs of human beings and man cannot live without it. The style of cloth and the fabrics from which they are made must give warmth, maintain body temperature and must be comfortable to wear. As stated by Sampaio et al. (2017) and Isika (2014), many garment designers develop new products of various types in accordance with the trend set by the leading international designers. The researchers are of the view that garment is very primarily important because it makes one look good and feel good about themselves. Besides, they are very important because, in the culture settings, people do tend to judge others by the clothes or fashion styles they use.

2.4. Methods of Garment Production

2.4.1. Freehand Cutting Skill

Freehand cutting as a method of cutting the fabric marked with chalk based on a measurement and cut directly without the use of a paper pattern (Forster & Ampong, 2012). Free-hand cutting was originally used throughout the world before the invention of commercial sewing patterns. According to Omoavowere and Gloria (2011), free-hand cutting is a method of cutting a style of garment directly on the fabric without the use of a pattern. Free-hand cutting is the art of

cutting and making a garment to fit any body size (Bakker-Edoh, 2018).

Free-hand method of cutting is distinctly different from the process of placing the commercial pattern pieces (cut style pieces) on a piece of fabric and cutting it out following instructions on the pattern. Tailors chalk may or may not be used to make markings on the fabric. The tailor or seamstress is usually very experienced, and over time have become accustomed to what he or she does (in most cases through trial and error) (Bakker-Edoh, 2018). In free-hand cutting, specific measurements are taken directly from the body and enrolled on the fashion fabric. Seam allowances and other intakes, depending on the style, are added to these measurements before cutting. After all pieces have been cut, various foundational sewing skills which must be acquired prior to attempting free-hand cutting are applied step-by-step in completing the garment (Bakker-Edoh, 2018).

2.4.2. Pattern Making Skills

Pattern making is the art of designing the outline of a garment. Thomas (2009) posits that the first step in pattern making is taking of body measurements. Thomas recommends that when taking measurements for pattern making; the person should just wear normal underclothes, and if a lady, normal pantyhose and normal bra. Steele (2006) noted that a system of sizes and patterns made it possible to fit the body, especially the male body, without resorting to custom-made clothing. Kiron (2012) also indicated that patterns are needed in dress-making in order to obtain a better fit and to save fabric. Aldrich (2006) justifies the use of block patterns in the clothing industry because the blocks are constructed to standard (average) measurements for specific groups of people but could also be drafted to fit an individual figure using personal measurements.

Pattern making is based on basic patterns with standard measurements but when employed in designing, one makes use of fitting darts to increase garment fitting (Aldrich, 2014). Anikweze (2013) added that pattern has several advantages which include the ability to design patterns to fit into economical fabric layouts, the possibility of restyling old patterns and out-of-date clothing into new ones. It also ensures ease in determining causes of mistakes during the making of the pattern and how to correct them. By pattern, one can plan properly and organize himself or herself efficiently during construction of garment (Aldrich, 2014; Rosen, 2004). According to MacDonald (2010) and Joseph-Armstrong (2010), patterns used in garment making bring out the good style of the garment and makes it fit better.

2.5. Effect of Pattern and Freehand Cutting Methods in Garment Production

The method of garment construction has great influence on the outcome of garment fit, since each technique is suited to a particular fit, style and modification. Bray (2009) revealed that the main drawback of freehand cutting on haute couture approach to garment creation is the time required for the many attempts to produce a perfect shape for just single garment, and this renders the approach

unsuitable for modern mass construction. The measurement of individual is utilised directly on the fabric in freehand cutting. If a dressmaker or a tailor makes a mistake while using the freehand cutting, the fabric is usually wasted. According to [Shailong and Igbo \(2009\)](#), free-hand method of garment construction may spoil the garment entirely, thereby wasting the fabric. In addition, free-hand cutting is time consuming and slow, therefore cannot be conveniently used for mass construction of garments.

[Bray \(2009\)](#) further reiterated that the advantages of pattern outweigh that of free-hand cutting in the sense that the outcome of pattern cutting results in conformance to international designs whereas the free-hand cutting operates within the traditional settings and therefore, conforms to traditional design cues. Pattern has the ability of restyling old patterns as well as out of date clothing into fashionable ones to suit the demand of the time and also the ease of determining causes of mistakes on a particular design and flexible planning for correcting procedure ([Tamakloe, 2011](#); [Larbi & Atta, 2009](#)). Tamakloe outlined that pattern skills increase productivity and maximize profit and ensure business survival and growth.

[Larbi and Atta \(2009\)](#) affirmed that pattern helps to identify certain faults that might arise on the design and seek to adapt remedies to the problem before construction. In contrary, the free-hand cutting skills only identify the problem through fitting after sewing which waste much time and resources ([Tamakloe, 2011](#); [Larbi & Atta, 2009](#)). Patterns are accurate to a point; therefore, good fitting is likely to be achieved. They are available in different sizes to suit different figures. If the accompanying instructions are carefully followed, the results are satisfactory ([Christensen, 2017](#)). Patterns are inexpensive in the long run in that several dresses could be made from one pattern. They give dresses a tinge of professional touch. Finally, printed pattern process can be easily used by inexperienced dressmakers as the instructions are clearly provided.

3. Methodology

3.1. Research Design

The study utilised survey research design and the research approach used was quantitative research. Survey was used for this study as it has the advantage of soliciting respondent's views on the nature of the situation as it existed at the time of a study ([Creswell, 2012](#)). The design is an efficient way of collecting information of a large group of people within a short time using questionnaires.

3.2. Population

The population of the study includes roadside dressmakers and tailors, fashion designers and final year fashion students of public tertiary institutions in Kwadaso Municipality, Sunyani East Municipality and Asafo Area in the Ashanti Region of Ghana. The total target population was estimated at 1377 respondents, comprising; 276 registered roadside dressmakers, 152 tailors, 108 fashion de-

signers and 841 fashion students at Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development, Kumasi Campus (*AAMUSTED*), Sunyani Technical University (STU) and Kumasi Technical University (KsTU). The target population details are as shown in **Table 1**.

3.3. Sampling Technique and Sample Size

Multi-stage sampling method was used for this study and it involved three stages. Due to the vastness of the study area (i.e., Kumasi and Sunyani), there was the need to narrow the study area by developing study strata. The first stage involved purposive selection of communities from Kumasi and Sunyani area. The second stage involved the selection of individual dressmakers and tailors as well as fashion designers from the selected communities using convenience sampling technique. Convenient sampling technique was used to select respondents to talk about issues related to the free-hand cutting and patterns. From a population of 1377, a sample size of 302 was used bringing the percentage to 21.9% approximately 22.0% based on the table developed by *Krejcie and Morgan (1970)*. **Table 2** shows the sample size determination.

3.4. Data Collection Instrument

Questionnaire was used to collect data from dressmakers and tailors, fashion designers and fashion students. The questionnaire comprised both open ended and

Table 1. Distribution of population.

| Group | Total population | | | | Total |
|-------------------|------------------|------------|--------------|------------|-------------|
| | Schools | Kwadaso | Sunyani East | Asafo Area | |
| Dressmakers | | 135 | 107 | 34 | 276 |
| Tailors | | 83 | 51 | 18 | 152 |
| Fashion Designers | | 58 | 39 | 11 | 108 |
| | AAMUSTED | 323 | --- | --- | 323 |
| Students | KsTU | --- | --- | 316 | 316 |
| | STU | --- | 202 | --- | 202 |
| Total | | 599 | 399 | 379 | 1377 |

Table 2. Sample size determination.

| Respondents | Population | Sample size |
|-------------------|-------------|-------------|
| Dressmakers | 276 | 61 |
| Tailors | 152 | 33 |
| Fashion Designers | 108 | 24 |
| Fashion Students | 841 | 184 |
| Total | 1377 | 302 |

close ended. Questionnaire was used because it is useful with large sample sizes and research respondents who are usually difficult to contact. It also elicits more candid and more objective replies suitable for the respondents to check their information.

3.5. Method of Data Analysis

The data collected was coded and the SPSS Version 23.0 was used for the analysis. The data was presented in a tabular form using descriptive statistics such as mean and standard deviation. In addition, ANOVA was used to test the difference between the views of the respondents on the effect of integrating pattern and free-hand cutting methods in garment production.

4. Findings and Discussion

4.1. Effect of Fitting of Freehand Cutting and Patterns on Finished Garment

In ascertaining the effect of fitting freehand cutting and patterns on finished garments, descriptive statistics were used to measure the variables. The results obtained were ranked in descending order as shown in **Table 3**. The statements were measured with mean and standard deviations and the significant mean level was pegged at 3.0. Anything above the 3.0 benchmarks is considered as a strong effect and those below the 3.0 cut-off point are rejected and considered as

Table 3. Responses on the effect of fitting of freehand cutting and patterns.

| Effect of fitting of freehand cutting and patterns | Descriptive | | One-Way ANOVA ^a | | |
|--|-------------|----------|----------------------------|--------------------|--------|
| | Mean | Std. Dev | F | Sig. | MS |
| Freehand cutting ($\bar{x} = 3.75$) | | | | | |
| Garment made with freehand cutting fits better on the shoulder. | 3.91 | 0.909 | 8.642 | 0.000 ^a | 6.522 |
| The sleeve of a garment made with freehand cutting fits better on the arm. | 3.90 | 0.934 | 12.123 | 0.000 ^a | 9.298 |
| The garment made with freehand cutting fits better on the bust. | 3.88 | 0.970 | 12.851 | 0.000 ^a | 10.537 |
| Garment made with freehand cutting fits better on the waist | 2.90 | 1.315 | 6.627 | 0.000 ^a | 4.266 |
| Garment made with freehand cutting fits better on the hip. | 2.87 | 1.357 | 5.824 | 0.001 ^a | 3.826 |
| Garment made with free-hand cutting drapes well on the body. | 2.79 | 1.427 | 15.185 | 0.000 ^a | 10.537 |
| Patterns ($\bar{x} = 4.14$) | | | | | |
| The garment made with a pattern fits better on the bust. | 4.23 | 0.720 | 1.806 | 0.147 | 0.928 |
| The sleeve of a garment made with a pattern fits better on the arm. | 4.19 | 0.760 | 0.956 | 0.414 | 0.553 |
| Garment made with pattern fits better on the hip. | 4.17 | 0.768 | 1.731 | 0.161 | 1.011 |
| Garment made with pattern fits better on the shoulder. | 4.12 | 0.772 | 1.898 | 0.131 | 1.118 |
| Garment made with pattern drapes well on the body. | 4.09 | 0.883 | 2.439 | 0.065 ^c | 1.869 |
| Garment made with pattern fits better on the waist | 4.05 | 0.882 | 2.810 | 0.040 ^b | 2.137 |

Note: ^a $P < 0.01$, ^b $P < 0.05$, ^c $P < 0.1$; \bar{x} -bar ≥ 3.0 = Agreed.

weak. ANOVA test was conducted to compare the views of the dressmakers, tailors, fashion students, and fashion designers and whether their views differ from each other.

Presented in **Table 3** shows the mean score on the fitting of garments made with freehand cutting and patterns. On free-hand cutting, the respondents accepted that a garment made with free-hand cutting fits better on the shoulder with a mean score of 3.91 and a standard deviation of 0.909. The ANOVA test found a significant difference between the views of the respondents ($F = 8.642$, $P = 0.000 < 0.01$). Also, the respondents accepted that the sleeve of a garment made with freehand cutting fits better on the arm. This statement reflected a mean score of 3.90 and a standard deviation of 0.934. The findings showed a significant difference between the views of the respondents ($F = 12.123$, $P = 0.000 < 0.01$).

Moreover, with a mean score of 3.88 and a standard deviation of 0.970, the respondents accepted that a garment made with freehand cutting fits better on the bust. ANOVA test showed a statistically significant ($F = 12.851$, $P = 0.000 < 0.01$) difference between the views of the respondents on garments made with freehand cutting fit better on the bust. On the contrary, the respondents rejected that a garment made with free-hand cutting fits better on the waist (mean = 2.90), a garment made with free-hand cutting fits better on the hip (mean = 2.87), and a garment made with free-hand cutting drapes well on the body (mean = 2.79). These statements failed to meet the predetermined cut-off point of 3.0. However, the views of the respondents on these statements were statistically significant differences from each other at 1%. This indicates that a garment made with freehand cutting fits better on the shoulder, the sleeve fits better on the arm and fits better on the bust.

On the effect of fitting a garment made with a pattern, the respondents accepted that a garment made with a pattern fits better on the bust. The respondents accepted all the statements relating to fitting of garments made with patterns. With a mean score of 4.23 and a standard deviation of 0.720, the respondents accepted that a garment made with a pattern fits better on the bust. There was no statistically significant difference between the views of the respondents ($F = 1.806$, $P = 0.147 > 0.1$). The statement that the sleeve of a garment made with a pattern fits better on the arm had a mean of 4.19 and a standard deviation of 0.760. No significant difference ($F = 0.956$, $P = 0.414 > 0.1$) was found between the views of the respondents on the statement that the sleeve of a garment made with a pattern fits better.

Also, the respondents accepted that garment made with pattern fits better on the hip. This statement had a mean score of 4.17 and a standard deviation of 0.768. The ANOVA test shows no statistically significant difference ($F = 1.731$, $P = 1.161 > 0.1$) between the views of the respondents. It appears from the study that a garment made with a pattern fits better on the shoulder. The respondents accepted this statement with a mean score of 4.12 and a standard deviation of 0.772. The view of the respondents was statistically insignificant ($F = 1.898$, $P =$

0.131 > 0.01). An indication from **Table 3** reveals that garment made with pattern drapes well on the body. The respondents accepted with a mean score of 4.09 and a standard deviation of 0.883. The view of the respondents was different at a significant level of 10% ($F = 2.439$, $P = 0.065 < 0.1$). The statement that a garment made with a pattern fits better on the waist reflected a mean score of 4.05 and a standard deviation of 0.882. There was a statistically significant difference ($F = 2.439$, $P = 0.040 < 0.05$) between the views of the respondents on a garment made with a pattern that fits better on the waist. The overall result shows that with an average mean score of 4.14, a garment made with a pattern fits better than a garment made with freehand cutting with a mean score of 3.75.

4.2. Effectiveness of Freehand Cutting and Pattern in Garment Construction

In determining the effectiveness of using both freehand cutting and patterns in garment construction, descriptive statistics were used to measure the variables. The results obtained were ranked in descending order as shown in **Table 4**. The items were measured with mean and standard deviations and the significant mean level was pegged at 3.0. Anything above the 3.0 benchmarks was considered as a strong factor and those below the 3.0 cut-off point were rejected and considered as weak. ANOVA test was conducted to compare the view of the respondents.

As displayed in **Table 4**, the mean score ranges from 3.80 - 4.09 which is above the cut-off point of 3.0 and therefore all the statements were accepted by the respondents. The respondents agreed that garments made from both freehand cutting and patterns have similarities to ready-made clothes. This statement attained a mean of 4.09 and a standard deviation of 0.981. There was a

Table 4. Effective use of both techniques in garment construction.

| Effect of both techniques in garment construction | Descriptive | | One-Way ANOVA ^a | | |
|--|-------------|----------|----------------------------|-------|-------|
| | Mean | Std. Dev | F | Sig. | MS |
| Garments made from both freehand cutting and patterns have similarities to ready-made clothes. | 4.09 | 0.981 | 6.472 | 0.000 | 5.833 |
| Freehand cutting and patterns eliminate mistakes in garment construction. | 4.08 | 0.863 | 3.830 | 0.010 | 2.756 |
| The use of both freehand cutting and patterns has the ability to restyle old patterns. | 4.05 | 0.990 | 6.390 | 0.000 | 5.872 |
| Freehand cutting and patterns are both conveniently used for mass construction | 4.05 | 1.029 | 6.389 | 0.000 | 6.345 |
| The use of both freehand cutting and patterns saves fabric in garment construction | 3.96 | 0.948 | 2.900 | 0.036 | 2.547 |
| The use of freehand cutting and patterns saves time in garment construction | 3.80 | 0.889 | 2.289 | 0.079 | 1.780 |

Note: ^a $P < 0.01$, ^b $P < 0.05$, ^c $P < 0.1$; $\bar{x} \geq 3.0 =$ Agreed.

significant difference between the views of the respondents ($F = 6.472$, $P = 0.000 < 0.01$). Also, it appears that freehand cutting and patterns eliminate mistakes in garment construction with a mean score of 4.08 and a standard deviation of 0.863. The ANOVA test shows a statistically significant difference between the respondents ($F = 3.830$, $P = 0.010 < 0.05$).

Furthermore, the respondents agreed that the use of both freehand cutting and patterns has the ability to restyle old patterns. This statement had a mean of 4.05 and a standard deviation of 0.990. There was a statistically significant difference ($F = 6.390$, $P = 0.000 < 0.01$) between the views of the respondents that the use of both freehand cutting and patterns has the ability to restyle old patterns. Conversely, the finding shows that freehand cutting and patterns are both conveniently used for mass construction. This statement attained a mean score of 4.05 and a standard deviation of 1.029. A statistically significant difference ($F = 6.389$, $P = 0.000 < 0.01$) was found between the views of the respondents. Again, with a mean of 3.96 and a standard deviation of 0.948, the respondents accepted that the use of both freehand cutting and patterns saves fabric in garment construction. The opinions of the respondents differ from each at a significant level of 5%. According to the respondents, the use of freehand cutting and patterns saves time in garment construction. This statement attained a mean of 3.80 and a standard deviation of 0.889. There was a statistically significant difference between the opinions of the respondents at the significance level of 1%.

4.3. Discussion

The findings show that garment made with pattern fits better on the bust, arm, hip, shoulder, waist and drapes well on the body. Although, there is a statistically significant difference between the opinions of the respondents, they all agreed that garment made with a pattern fits better than a garment made with freehand cutting. This finding agrees with the study by [Shailong and Igbo \(2009\)](#) who reported that most dressmaking industries in Nigeria were folding up mainly due to the use of freehand cutting techniques for constructing garments that resulted in poorly fitting garments. The finding on garments made with patterns concurs with the assertion by [MacDonald \(2010\)](#) and [Joseph-Armstrong \(2010\)](#) that when patterns are used in garment construction, it helps to bring out the good style of the garment and makes it fit better as compared to freehand cutting. The implication is that fit in pattern garment is more recommended as it is likely to meet the satisfaction of both informal dressmakers and tailors and the clients. This is because if a garment is ill-fitted as a result of the use of the freehand cutting method, both the informal dressmaker or tailor and the clients are affected negatively. As the informal dressmaker or tailor faces rejection of the garment made and loss of clients, the clients may also incur the cost of losing a fabric. There is the need to develop the potential that pattern seemed to bring into garment construction as over-reliance on free-hand cutting could keep some dress-

makers and tailors out of business with time. The researcher is of the view that making garments with appropriate methods, had better fit and was generally more accepted by assessors compared to freehand cutting.

The study further discovered that garments made with both techniques (i.e. freehand cutting and pattern) eliminate mistakes in garment construction, and have the ability to restyle old patterns. Also, it was discovered that both techniques are conveniently used for mass garment construction, saving fabric and time in garment construction. This implies that employing both techniques during garment construction will give dresses a tinge of professional touch, and the process can be easily used by inexperienced dressmakers as the instructions are clearly provided. The use of patterns or freehand cutting has its own advantages and disadvantages. While the advantages will favour garment production, the disadvantages would constitute challenges to be overcome if both techniques are employed during garment construction. On the advantage side, the use of both patterns and freehand cutting saves time, saves fabrics, and eliminates mistakes in garment construction.

Freehand cutting and patterns are accurate to a point, but using both techniques helps achieve perfect-fit garments. [Christensen \(2007\)](#) reported that good fitting is likely to be achieved by employing both techniques. If the accompanying instructions are carefully followed, the results are satisfactory. [Tamakloe \(2011\)](#) outlined that using both increases productivity and maximizes profit and ensures business survival and growth. [Larbi and Atta \(2009\)](#) affirmed constructing a garment with both techniques helps to identify certain faults that might arise in the design and seek to adapt remedies to the problem before construction. The use of both techniques helps to overcome the disadvantages of using one technique.

5. Conclusion and Recommendations

As portrayed by the results of the findings, a garment made with a pattern fits better on the bust, arm, hip, shoulder, and waist and drapes well on the body as compared to freehand cutting. The overall result shows that a garment made with a pattern fits better than a garment made with freehand cutting. It was also obvious from the findings that garments constructed with both freehand cutting and pattern have similarities to ready-made clothes, eliminate mistakes in garment construction, and have the ability to restyle old patterns. It was also apparent that dressmakers, tailors, and fashion designers using both freehand cutting and pattern can be conveniently used for mass garment construction, saving fabric and time in garment construction.

On the evidence of the findings and conclusions achieved, the study recommended there should be an awareness programme organised by the government, quasi-governmental and non-governmental agencies to dressmakers/tailors who use freehand cutting to make use of patterns as well while sewing in order to produce garments that fit better. Ghana National Tailors and Dressmakers As-

sociation (GNTDA) should encourage and train their members on the use of patterns and this would improve and manifest in the high standard of fit of garment among the dressmakers and tailors in the informal sector in the near future.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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