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**INFLUENCE OF DEMOGRAPHIC CHARACTERISTICS ON USE OF  
PATTERN DRAFTING AND FREE-HAND CUTTING IN APPAREL  
CONSTRUCTION AMONG INFORMAL DRESSMAKERS AND TAILORS  
IN KOFORIDUA, GHANA**

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**Abstract**

**Purpose** – The purpose of this research paper is to investigate the influence of demographic characteristics on use of pattern drafting and free-hand cutting in apparel construction among informal dressmakers and tailors in Koforidua, Ghana.

**Design/methodology/approach** – the study used cross-sectional descriptive survey designs and employed quantitative approach of data collection. Data were analyzed using both descriptive and inferential statistics (Pearson's  $\chi^2$  of association).

**Findings** – other than gender of dressmakers and tailors, age, education qualifications, type of training, and years of experience were all found to have significant influences on the methods used in apparel construction.

**Practical implications** – Study results provided imperative information for policy makers in apparel construction sector.

**Keywords:** Apparel, free-hand cutting, informal dressmakers and tailors, pattern-drafting.

**Paper type** Research paper

**INTRODUCTION**

Apparel communicates louder than words hence more acceptable apparel helps to boost one's confidence. Apparel, style and fit directly determine whether a client is satisfied or not (Dove, 2016). This in effect relates to adequate knowledge about the selection of apparel which fits and makes one feel comfortable considering the type of method used to make the apparel. According to Obinnim and Pongo (2015), free-hand cutting and pattern drafting remain the bedrock of ways of designing apparel in fashion industry which come with variances of fit and modifications of style.

The variance in competencies displayed by informal fashion designers and diverse sources with which apparel are produced makes it more difficult to assess perfect apparel fit. Variances also

create marginalization in skills training between formal and informal setting with regard to the scope of training as well as the mode of instruction for the concept (Foster & Ampong, 2012). The adjustment in competencies training placed the informal skills training on dressmakers and tailors in socially disadvantaged group.

Carter (2010) ascertained that skills acquisition has become very essential to earn a meaningful living. This demonstrates Ghanaian market's increasing demand for new and fashionable custom-made apparel that conforms to the body contour of the client. This has become necessary in order to compete in the hypercompetitive global environment. Hence, informal fashion trainers in most communities in Ghana are contending in the platform of perfect fit and style modification to meet client's satisfaction and to compete globally in the fashion industry. Clothing and textiles are important components of Technical, Vocational Educational Training (TVET) programme in Africa including Ghana where people are trained to acquire skills in self-employment through apparel making. A report from Ghana Statistical Service (2014) indicated less than two % of its secondary enrolments in technical and vocational education. Graduates from junior high schools alternatively have access to skills through apprenticeships and other enterprise-based training, or through training centres operated outside formal education.

Apparel is an article worn to protect and beautify the body. It is a basic need of humans which communicates to others the attributes and values of the wearer. Apparel shows if the wearer is reserved, conservative, organized, and confident or a leader (Foster & Ampong, 2012; McClintock & Hardcaste, as cited in Aboagyewaa-Ntiri & Apreku, 2012). It also depicts the wearer's identity, social-economic status, gender, and religious inclination (Sarpong, Howard & Osei-Ntiri, 2011). Apparel refers to all types of clothes worn by humans, both men and women. It is made through the use of various methods such as pattern drafting or free-hand cutting.

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 apparel (Ekumankama & Igbo, 2009). Free-hand cutting does not employ patterns and it is achieved by cutting a style of the apparel directly on the fabric (Shailong & Igbo, 2009). The option of free-hand cutting or pattern drafting method to make apparel may affect the end product. Generally, clients are more particular about how well apparel fits (Dove, 2016; Shailong & Igbo, 2009).

Clients now demand better products as they have difficulties with the fit of apparel made by their informal dressmakers and tailors (Wallace & Choi, 2011). Studies by Foster and Ampong (2012) revealed that pattern drafting still remains a challenge in the informal sector (small scale apparel industries) because it is believed that free-hand cutting instructions were fewer and easier to commit to memory.

Studies have shown that though pattern drafting is mostly taught at the higher level of the Ghanaian education (Foster & Ampong, 2012), most of the informal dressmakers and tailors may not have gone through secondary education and therefore lack the skills in pattern drafting. To solve this deficiency, the Dressmakers and Tailors Association of the Koforidua in the New Juaben Municipality of Ghana organises a periodic workshop on pattern drafting for its members, but it seems most of them go back to use free-hand cutting. The question was what are the hindrances or obstacles that prevent the informal dressmakers and tailors in Koforidua area from fully adopting one method or preferring the other as they construct apparel for their clients? Research has shown that most clients are likely to resort to use ready-made new clothes when

they are not satisfied with the services they receive from their informal dressmakers and tailors (Boakye, 2010; Efajemue & Lily, 2011; Foster & Ampong, 2012, Dove 2016).

Considering this background, the aim of this study is to investigate whether demographic characteristics have an influence on the use of pattern drafting and free-hand cutting in apparel construction among informal dressmakers and tailors in Koforidua, Ghana.

## **RESEARCH METHODOLOGY**

Research design, sampling, instrumentation, and data collection

A cross-sectional descriptive survey was used in the study. The study targeted 288 registered dressmakers and tailors in Koforidua region of Ghana. Of this number, 195 were dressmakers and 93 were tailors. A systematic sampling technique using a list of all registered dressmakers and tailors was used to select a third of the total population resulting to 96 study participants (65 dressmakers and 31 tailors). Questionnaires were distributed to study participants for data collection with the help of trained research assistants.

Data analysis

The data analysis was done using statistical package for social sciences (SPSS, v.20). Both descriptive statistics (percentages and frequencies) and inferential statistics (Pearson Chi-square) were conducted to establish possible patterns in the variables, describe the sample characteristics and to establish the influence of demographic characteristics on the methods used in apparel construction.

## **RESULTS**

Demographic profiles of the participants

The study sought the demographic characteristics of dressmakers and tailors. Of these participants, the study found out that all dressmakers and tailors were females and male respectively. On age, majority (73.9%) were within the age bracket of 31 to 40 years followed those between 21 to 30 years accounting for 13.6%. However, about 12.5% were above 41 years and none below found to be below 20 years. Moreover, majority of these respondents (47.7%) were holders of JHS certificate, 29.5% primary school leavers and 18.2% vocational school graduates. With regard to type of training received, majority of dressmakers and tailors (87.5%) were trained on free-hand cutting while 12.5% were trained on both free-hand cutting and pattern drafting. None were trained on pattern drafting alone. With regard to their experience, more than third (36.4%) had been in the sector between 6 to 10 years, 31.8% between 11 to 15 years, and more than 16 years accounting for 19.3%. On the type of training they used to train the apprentices, majority (72.7%) used free-hand cutting.

Gender and Method used by Dressmakers and Tailors

The researchers sought to establish whether gender had any influence on the kind of method used by the respondents. Table 1 presents the results of method used and gender of dressmakers and tailors.

**Table 1: Cross tabulation between Methods used to Make an Apparel and Gender**

Method Use	Female		Male		Total	
	N	%	N	%	N	%
Free-hand cutting	40	68.0	24	83.0	64	100.0
Pattern drafting	19	32.0	4	14.0	23	100.0
Both	0	0.0	1	3.0	1	100.0
<b>Total</b>	<b>59</b>	<b>100.0</b>	<b>29</b>	<b>100.0</b>	<b>88</b>	<b>100.0</b>

Pearson's  $X^2 = 13.78, p > 0.05$

Table 1 shows that 40(68%) of the dressmakers and 24(83%) of tailors used free-hand cutting as compared to 19 dressmakers representing 32% and 4(14%) tailors who used pattern drafting. It is worth mentioning that out of the 88 respondents only one male was found to be using both free-hand cutting and pattern drafting. The results further showed that a total of 64 females and males used free-hand cutting as compared to 23 who used pattern drafting. This meant many of both dressmakers and tailors (females and males) were found to use more of a particular method (free-hand cutting) than the other (pattern drafting). Pearson's Chi-square results of the association between gender of dressmakers/tailors and methods used whether freehand cutting or pattern drafting were not significant ( $X^2 = 13.78, p > 0.05$ ). This result meant that the gender of the informal dressmakers and tailors had no association with the type of methods they used. In other words, gender was not an influence on the methods dressmakers and tailors used when constructing apparels.

#### Age and Method used by Dressmakers and Tailors

The study also sought to find out the age differences and the method used in apparel construction by dressmakers and tailors. The results are presented in Table 2.

**Table 2: Cross tabulation between Age of Dressmakers and Tailors and Methods Used**

Age	Pattern Drafting		Free-hand Cutting		Both		Total	
	N	%	N	%	N	%	N	%
21-30yrs	13	30.2	30	69.8	0	0.0	43	100.0
31-40yrs	7	21.9	25	78.1	0	0.0	32	100.0
41 yrs. and above	3	23.0	9	69.2	1	7.7	13	100.0
<b>Total</b>	<b>23</b>	<b>26.1</b>	<b>64</b>	<b>72.7</b>	<b>1</b>	<b>1.1</b>	<b>88</b>	<b>100.0</b>

Pearson's  $X^2 = 15.75, p < 0.05$

The results in Table 2 revealed that 43 of the respondents were aged 21-30years, 32 aged 31-40years and 13 aged between 41years and above. The results demonstrated that the most used method among all the ages was free-hand cutting (N=64, 72.7%) as compared to pattern drafting (N=23, 26.1%). However, it is worth mentioning that respondents with age range of 21-30 years were more versatile with the use of both free-hand cutting and pattern drafting. Pearson's Chi-square results of the association between age of dressmakers/tailors and methods used whether freehand cutting or pattern drafting were significant ( $X^2 = 15.75, p > 0.05$ ) demonstrating that, age could influence the method used by dressmakers and tailors.

### Level of Education and Method Used

Table 3 shows the findings on level of education and method used. The findings show that two dressmakers and tailors had no formal education, 42 had JHS certificate while 25 had primary school education. It is important to observe that four of the dressmakers and tailors had tertiary education. One can observe from Table 3 that most the respondents with education levels between no education and JHS used free-hand cutting (No education=2, Primary=18, and JHS=34) as compared to the respondents with the same educational level who used pattern drafting. It was also evident from the results that while all four respondents with tertiary education used pattern drafting, none of the respondents with no education used it.

**Table 3: Level of Education of Dressmakers and Tailors and Method Used**

Level of Educ.	Pattern Drafting		Free-hand Cutting		Both		Total	
	N	%	N	%	N	%	N	%
	No Education	0	0.0	2	100.0	0	0	2
Primary	7	28.0	18	72.0	0	0	25	100.0
JHS	8	19.0	34	81.0	0	0	42	100.0
SHS	4	25.0	10	68.8	1	6.3	15	100.0
Tertiary	4	100.0	0	0.0	0	0	4	100.0
<b>Total</b>	<b>23</b>		<b>64</b>		<b>1</b>		<b>88</b>	<b>100.0</b>

Pearson's  $X^2 = 14.85, p < 0.05$

Pearson's Chi-square results of the association between level of education of dressmakers/ tailors and methods used whether freehand cutting or pattern drafting were significant ( $X^2 = 14.85, p < 0.05$ ). This suggested that education had some influence on the method used in apparel construction. Respondents with low level of education used free-hand cutting most, those with higher education used only pattern drafting or both.

### Type of Training and Current Method Used

The study also sought to find out if the training of dressmakers and tailors had influence on the current method they are using in apparel construction. Table 4 presents the findings.

**Table 4: Type of Training and Method Used by Dressmakers and Tailors**

Type of Training	Current Method Used					
	Free-hand cutting		Both		Total	
	N	%	N	%	N	%
Free-hand cutting	55	85.9	9	14.1	64	100.0
Pattern drafting	6	26.1	17	73.9	23	100.0
Both	0	0.0	1	100.0	1	100.0
<b>Total</b>	<b>61</b>		<b>27</b>		<b>88</b>	<b>100.0</b>

Pearson's  $X^2 = 16.23, p < 0.05$

As shown in Table 4, 55(85.9%) of the respondents who were trained with free-hand cutting still used free-hand cutting while one (100%) respondent trained with both pattern drafting and free-

hand cutting used both constructional methods. However, out of the total of 27 respondents trained with both methods, 17 (73.9%) used pattern drafting while nine (14.1%) used free-hand cutting. Table 4 also shows that the method most dressmakers and tailors were trained with was free-hand cutting and it had an influence on the current method used in apparel construction. Pearson's Chi-square results of the association between type of training dressmakers / tailors had gone through and methods used whether freehand cutting or pattern drafting were significant ( $X^2 = 16.23, p < 0.05$ ). This demonstrated that, type of training and methods used by dressmakers and tailors could be influenced by type of training.

#### Years of Experience and Method Used

The study also sought to find out whether years of working experience had influence on respondents use of a particular method of apparel construction and the results are presented in Table 5.

**Table 5: Years of Experience and Methods used by Dressmakers and Tailors**

Years of Experience	Pattern Drafting		Free-hand cutting		Both		Total	
	N	%	N	%	N	%	N	%
1-5 years	14	43.8	17	53.1	1	3.1	32	36.4
6-10years	5	21.7	18	78.3	0	0.0	23	26.1
11-15years	3	17.6	14	82.4	0	0.0	17	19.3
16 and above	1	6.3	15	93.7	0	0.0	16	18.2
<b>Total</b>	<b>23</b>		<b>64</b>		<b>1</b>		<b>88</b>	<b>100.0</b>

Pearson's  $X^2 = 12.17, p < 0.05$

Table 5 shows that a total of 14(43.8%) dressmakers and tailors with a working experience of 1 to 5 years used pattern drafting. This was followed by five (21.7.1%) of the respondents with a working experience of 6 to 10 years. It can also be noted from Table 5 that only one out of the 16 respondents with more than 16 years' experience used pattern drafting. One can observe that there were not many differences among the respondents on the use of free-hand cutting but comparing the two methods, there seemed to be a decline in the number of dressmakers and tailors who used pattern drafting after 15 years of experience. This might be as a result of lack of exposure to pattern drafting or they seemed to have more experience in free-hand cutting over the years and consequently showed more preference to this method. Pearson's Chi-square results of the association between years of experience of dressmakers / tailors and methods used whether freehand cutting or pattern drafting were significant ( $X^2 = 12.17, p < 0.05$ ). This suggested that one's working experience as dressmaker or tailor had some influence on the use of a particular method.

## DISCUSSIONS

### Demographic Characteristics of Dressmakers and Tailors

The current study revealed that more females (67%) than males tend to join the apparel construction business than men in Koforidua area. The picture as portrayed here might not be different from the reasons given to the findings on the gender of the apprentices. In agreement, Biney-Aidoo, Antiaye and Oppong (2013) reported that 67.5% respondents in their study were

dressmakers and tailors. Obinim and Pongo (2015) had commented in their study that men were more usually comfortable with ready-made new clothing as compared to women and this could explain why there were more dressmakers than tailors. This meant that dressmaking seemed to be more lucrative for dressmakers as many women tend to patronise the services of these dressmakers than men do for tailors.

With regard to age, it was found that the dressmakers and tailors in Koforidua were aged between 31 and 40 years which concurred with the findings of Obinim and Pongo (2015). This age range was higher as compared with the apprentices because most of these master-craftsmen would first have to finish their apprenticeship training and/or formal education before establishing themselves on the job market. Once they start off their small-scale apparel businesses, most of them work as sole practitioners before taking up apprentices to train them. Consequently, it was expected that, the dressmakers and tailors were found to be in a higher age group.

Education plays a key role in learning competency-based training. The study found that majority of the master craftsmen had formal education. Specifically, there were 29.5% primary school leavers, 47.7% JHS graduates, SHS 18.2% certificate holders and 2.3% who had tertiary education. There were only 2.3% of the respondents who mentioned that they had no formal education which was in agreement with the study by Forster and Ampong (2012) which reported that some of the dressmakers and tailors had no formal education.

Obinim and Pongo (2015) observing a similar trend in a study conducted in Ghana asserted that the respondents who had had secondary education also showed the willingness to upgrade themselves and improve their expertise so as to apply their academic knowledge to their trade. This finding is in a good direction because the need for formal education as a component of the current in the growth in fashion industry cannot be looked.

On type of training received by dressmakers and tailors, it was revealed that the main apparel construction method learnt by the dressmakers and tailors in Koforidua area was free-hand cutting. The finding was consistent with the studies of Effajemue and Lilly (2012) and Obinim and Pongo (2015) who asserted most informal dressmakers and tailors in Nigeria and Ghana were trained mostly in free-hand cutting methods. This situation may have resulted from the fact that most trainers in the informal fashion industry might have perceived the problems that usually come with the use of pattern drafting.

These may include a working environment which may not be conducive to develop and practice patterns, the amount of time to be used in the practical and drafting work in patterns, lack of basic equipment and tools such as brown papers, dummies, muslin for making toile and many more. With some of these setbacks, the informal dressmaker and tailors, tend to lend themselves to the use of free-hand cutting which seemed to be easier among the two methods.

Experience they say is the best teacher, hence, the researcher analysed the work experience of dressmakers and tailors in the Koforidua area. The intention was to find out the experience of the dressmakers and tailors per the number of years they have been in the fashion industry. It was revealed that the respondents had work experiences ranging from a year to 16 years and above with most of them clustering around a working experience of between six and 15 years. With such a rich working experience, the informal dressmakers and tailors were likely to benefit from

good expertise, skills and the requisite knowledge that come with long practice of a trade such as apparel construction.

In the area of training method, it was also evident from the finding that, majority of informal dressmakers and tailors used free-hand cutting as the preferred training method for training their apprentices. The finding concurs with the studies by Foster and Ampong (2012) which revealed that pattern drafting still remains a challenge in the informal sector because it is believed that free-hand cutting instructions were usually few and easy to memorize. In addition, since most dressmakers and tailors underwent training using free-hand cutting it was obvious that, they would have a lot of skills in free-hand than pattern drafting. Subsequently, free-hand cutting was the methods they were likely to use in training the apprentices that enrolled under them.

#### Influence of Informal Dressmakers and Tailors Demographic Characteristics on Method Used in Apparel Making

Personal characteristics such as gender, age and education level play a role in skill development. The method used by informal dressmakers and tailors could be influenced by these demographic characteristics. The current study revealed that the gender of the informal fashion designer did not have much influence on their choice of method used in constructing apparel. Both females and males used more of free-hand cutting than pattern drafting. This finding is in agreement with the study of Obinim and Pongo (2015) who found that the participants used free-hand cutting in making apparel regardless of their gender. This may be to the fact that both females and males were trained the same way in the methods of apparel construction and therefore, their sex orientation did not have any influence on their practice.

With regard to age and method used, the study found one's age did not have influence on a particular method used for apparel construction. It was found that both the young and the older dressmaker and tailors used more of free-hand cutting than pattern drafting. It was observed that the respondents in the low age ranges were more versatile in the use of both methods. This result is not far from the studies of Anokye (2010) and Obinim and Pongo (2015) who found that most youth in the informal fashion industry has some appreciable level of education that tend to help them have some amount of control over the use of constructional methods. This is an indication of a gradual blend of the pattern drafting and free-hand cutting and more of the former in the future growth of the informal fashion industry.

Level of education is an important area far as apparel construction is concerned. This study revealed that education level of dressmakers and tailors in Koforidua area influenced the method used in apparel construction. None of the respondents without education used pattern drafting while none of the respondents with tertiary education used free-hand cutting. This seemed to be the situation because while the use of free-hand cutting does not involve a lot of computations, pattern drafting required strict adherence to rules in patterns (Foster & Ampong, 2014; Biney-Aidoo et al., 2013). Dressmakers and tailors who had higher education levels used pattern drafting compared to those with lower education levels. Usually, tertiary graduates who were exposed to pattern drafting and other constructional techniques during schooling displayed a lot of self-confidence in the trade than other dressmakers and tailors with lower or no educational background.

Another variable that discussed was the influence of informal dressmakers and tailors' use of a particular apparel constructional method as against the method they were trained with. It was

revealed that informal dressmakers and tailors who were trained with free-hand cutting method used free-hand cutting (85.9%) in apparel construction. The finding corroborates with other studies that found that informal dressmakers and tailors preferred to use the method they were trained with in apparel construction other than trying other methods (Foster & Ampong, 2012). Most of the respondents indicated they were comfortable in the use of free-hand cutting to pattern drafting. This may have resulted from the fact that the former method required less time and used less complex processes. It was concluded that type of training the respondents received had influence on the methods they were currently using in their trade.

The last demographic that was considered among the dressmakers and tailors was their years of experience and method used. The study found that the respondents with working experience of one to five years more seemed to be using both methods for apparel construction. Further revelation of the study indicated that those with more than 16 years' experience lacked the knowledge on pattern drafting. This could be related to the fact that the most experienced informal dressmakers and tailors missed the opportunity of being exposed to some of the current methods such as the use of patterns in apparel making. It was concluded that one's working experience as dressmaker or tailor had some influence on the use of a particular method which may be due to the level of exposure and readiness to pick new knowledge.

#### Recommendations for Practice and Policy

The Informal Dressmakers and Tailors Association in Koforidua area should put appropriate measures in place to attract more males into the informal fashion industry by encouraging both female and male apparel construction in the training of apprentices. The IDTA should make it a policy to incorporate pattern drafting and other methods of apparel construction into the training curriculum of apprentices to develop interest in the use of these methods right from the onset. Moreover, the informal dressmakers and tailors should conduct periodic training to encourage the use of pattern drafting in apparel construction. In addition, they should ensure a balance in use of pattern drafting and free-hand cutting methods of apparel construction in the training of apprentices.

#### Limitations and further research

Although this study provides valuable insights, some potential limitations should be addressed in future research. First, this study only concentrated on informal dressmakers and tailors in Koforidua region of Ghana. In order to have a holistic view on the influence of the demographic characteristics on use of pattern drafting and free-hand cutting, a similar study could be conducted in other regions of the country and beyond.

Second, there is need to conduct a more detailed study including both the informal and formal dressmakers and tailors in all the regions of Ghana whose findings would give out the regional dynamics and disparities in terms of use of pattern drafting and free-hand cutting in apparel construction.

Finally, this study employed a cross-sectional approach to study a dynamix phenomenon in apparel construction. Thus, a longitudinal study is needed to allow for tracking of changes in apparel construction.

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