

Pattern drafting skills and men's shirt collar quality among local tailors in Kalulushi District, Zambia

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<https://doi.org/10.51867/ajernet.7.3.151>

ABSTRACT

Pattern drafting is a fundamental skill in garment construction that directly influences the quality and fit of finished products. Deficiencies in pattern drafting skills among local tailors contribute to poor collar quality, affecting consumer satisfaction and the competitiveness of locally produced garments. Methods: This study employed a descriptive cross-sectional design to investigate pattern drafting skills among local tailors in Kalulushi District, Zambia, and their relationship to men's shirt collar quality. Data was collected from 50 local tailors using a structured questionnaire. The sample was selected through simple random sampling from an estimated population of 110 tailors. Data was analysed using SPSS version 26 and Microsoft Excel, computing descriptive statistics, including frequencies and percentages, for all variables. Results: The findings revealed that 54% of respondents were neutral and 22% disagreed that pattern drafting is the art of designing the outline for sewing a cloth, indicating a limited understanding of this foundational concept. Furthermore, 66% were neutral, and 18% disagreed that drafting men's shirt collars requires strict adherence to steps. In comparison, 58% were neutral, and 26% disagreed that men's shirt collar drafting relies on basic pattern drafting as a foundation. Conclusion: The study concludes that deficiencies in pattern drafting skills among local tailors significantly contribute to poor collar quality. Recommendations include structured training in flat pattern drafting techniques, developing a resource bank of standardised patterns, and promoting cooperative approaches to pattern sharing and skills development.

Keywords: Collar Construction; Local Tailors; Kalulushi District; Men's Shirts; Pattern Drafting; Zambia

I. INTRODUCTION

Pattern drafting is the art of designing the outline or plan for sewing a garment. According to Aldrich (2006), the first step in pattern making is taking body measurements. Aldrich (2014) indicated that patterns are needed in men's shirt-making to obtain a better fit and to save material. Aldrich (2006) justified the use of block patterns in the clothing industry because blocks are constructed to standard (average) measurements for specific groups of people, but can also be drafted to fit an individual figure using personal measurements. This flexibility is essential for custom tailoring, where each garment must be adapted to the unique proportions of the individual wearer (Aldrich, 2014).

Garment production involves manufacturing clothing or establishing a clothing factory, which requires skilled personnel in areas such as pattern drafting, design, sewing, trimming, embroidery, and textile printing. Hollen (1972) advocated three pattern-making methods: flat-pattern, draping, and drafting. Flat-pattern drafting is the art of taking a set of measurements, a sheet of paper, and a pen, and coming away with a pattern. A flat pattern is based on commercialised basic patterns with standard measurements, but when used in design, one adds fitting darts to improve garment fit (Aldrich, 2006).

Pattern pieces are measured between the seam lines, not from edge to edge. Similarly, the art elements of design, such as vertical, horizontal, diagonal, and curved lines, as well as shapes, rely on accurate measurements to achieve the desired effects in communicating emotions, ideas, feelings, and mood. Okorie (2000) regards creativity and knowledge of measurements as imperative characteristics of garment designers. Men's shirt collar drafting usually relies on basic pattern drafting as a foundation or master pattern. The basic pattern for men's wear, including shirts and trousers, comprises several measurements to achieve a custom fit (Musheno, 1980). For shirt patterns, the required measurements include neck, neckband, shoulder, chest, centre front length, centre back, back width, waist, arm length, arm circumference, and sleeve length (Aldrich, 2014).

The relationship between pattern drafting and garment quality is critical. Aldrich (2014) shows that accurate pattern drafting underpins all subsequent construction processes. A well-drafted pattern ensures efficient fabric use, correct seam alignment, and a proper fit for the intended wearer. Conversely, poor pattern drafting creates a cascade of problems throughout construction, resulting in garments that are ill-fitting, uncomfortable, and aesthetically displeasing.

Despite the importance of pattern drafting skills, local tailors in the Kalulushi District have been observed producing men's shirts with significant collar defects. These defects include sloppy collars that distort facial appearance,

loose, sagging collars that make it difficult to wear a necktie, and visibly asymmetric collars, deficiencies in pattern drafting, or poorly finished collars. However, these observations remain anecdotal, and no empirical evidence has been documented to establish the prevalence of these defects or their relationship to deficiencies in pattern drafting. This gap in empirical evidence significantly limits understanding of the factors contributing to poor garment quality in Zambia's informal tailoring sector. While the literature links pattern drafting skills to garment quality (Aldrich, 2014), no study has systematically examined this relationship in the Zambian context.

1.1 Statement of the Problem

Local tailors in Kalulushi District produce men's shirts with collar defects that affect garment quality and consumer satisfaction. These defects, including sloppy, asymmetrical, and poorly finished collars, suggest underlying deficiencies in pattern drafting knowledge and practice. However, no empirical evidence documents the relationship between pattern drafting skills and collar quality in this context. While the literature establishes the importance of pattern drafting for garment quality (Aldrich, 2014), the specific nature and extent of pattern drafting deficiencies among local tailors in Zambia remain undocumented. This empirical gap limits the development of targeted interventions to improve collar quality and undermines the competitiveness of locally produced garments against imported alternatives. This study addresses this gap by systematically investigating pattern drafting skills among local tailors in Kalulushi District and their relationship to the quality of men's shirt collars.

1.2 Research Objectives

- i. To assess the level of understanding of pattern drafting concepts among local tailors in Kalulushi District.
- ii. To determine whether local tailors follow systematic steps when drafting men's shirt collars.
- iii. To establish whether local tailors use basic pattern drafting as a foundation for collar construction.

II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 The Concept of Pattern Drafting

Pattern drafting is a systematic method of creating paper patterns that serve as templates for cutting fabric. Aldrich (2014) states that pattern drafting is based on the principle that garments are constructed from flat fabric that must be shaped to fit the three-dimensional human body through strategic placement of darts, seams, and curves. The theoretical foundation draws on geometry, anthropometry, and design principles. Understanding how flat shapes correspond to curved surfaces is essential, as the collar stand must be drafted with a specific curve matching the neck's curvature, calculated from the wearer's measurements (Aldrich, 2014; Musheno, 1980).

2.1.2 Types of Pattern Drafting Methods

Hollen (1972) identified three primary methods: flat-pattern drafting (creating patterns from body measurements), draping (shaping fabric on a dress form), and block pattern modification (adapting existing patterns). For men's shirt collar construction, flat-pattern drafting is most appropriate as it allows precise control over collar dimensions. The collar block is drafted from basic body measurements, with the collar stand and collar leaf as separate pieces joined during construction (Aldrich, 2006).

2.1.3 The Importance of Systematic Steps

Rajput et al., (2012) emphasised that collar drafting requires strict adherence to specific steps: laying out collar stand length, drawing stand height, extending to button stand, shaping edges, determining collar length, and adding seam allowances. Each step must be executed precisely, as errors compound throughout the process (Aldrich, 2014).

2.1.4 Basic Pattern Drafting as Foundation

Okorie (2000) stated that collar drafting relies on basic pattern drafting. Basic pattern drafting requires measurements including neck, shoulder, chest, centre front, back width, waist, arm length, and sleeve length (Musheno, 1980). The relationship is hierarchical: the collar cannot be drafted accurately without correct body measurements and an understanding of how they translate into pattern dimensions

2.2 Empirical Review

2.2.1 Skills Development Pathways

Local tailors primarily develop skills through informal apprenticeships rather than formal education. In Zambia, 65% acquired skills through informal apprenticeships, with only 20% having formal training. Palmer (2007) found similar patterns in Ghana. Family transmission is significant: 70% of tailors had a family member who was also a tailor (Azuma & Fernie, 2003). Nigerian tailors developed skills through observation, imitation, and trial and error (Nwadi & Ezanwu, 2024).

2.2.2 Primary Sources of Skills Acquisition

Sources include informal apprenticeships (65%), family transmission (20%), self-teaching (10%), and formal education (5%). Apprenticeships typically last 2-5 years and focus on practical skills without formal instruction in pattern drafting or design (Palmer, 2007). Across five Sub-Saharan African countries, 75% acquired skills through informal apprenticeships or family transmission (ILO, 2022).

2.2.3 Level of Formal Education

Research consistently finds low formal education among informal tailors. In Zambia, 60% had not completed secondary education, with 28% having no formal education. Similar patterns exist in Nigeria (65% did not complete secondary education). Individuals with higher education tend to avoid informal trades (Palmer, 2007). While tailors with higher education were more likely to understand pattern drafting concepts, formal education did not necessarily translate into practical skill.

2.2.4 Effectiveness of Current Training Mechanisms

Current training mechanisms are inadequate. In Zambia, 72% could not sequence collar construction steps, and 68% could not explain each step's purpose. In Nigeria, only 28% of informally trained tailors produced quality collars, compared with 65% of formally trained tailors. Across Sub-Saharan Africa, tailors with formal pattern drafting training were 45% more likely to produce quality collars (ILO, 2022).

2.2.5 Global Perspectives

In developed countries, pattern drafting is a core competency taught systematically (Aldrich, 2014). In Sub-Saharan Africa, TVET institutions face a "skills gap" and lack modern equipment and qualified instructors (World Bank, 2020; ILO, 2017). Deficiencies observed in Kalulushi reflect a broader regional pattern (Palmer, 200).

III. METHODOLOGY

3.1 Research Design

This study employed a descriptive cross-sectional research design to systematically describe the pattern-drafting skills of local tailors in the Kalulushi District. According to Kothari (2004), research design is understood as a logical plan for conducting research. The descriptive design was selected because it enables the researcher to systematically describe the target population's characteristics, practices, and skills without manipulating variables. Descriptive research is particularly appropriate for studies that aim to answer "what" and "how" questions about a population (Creswell, 2014). The cross-sectional design means that data were collected at a single point in time, providing a snapshot of local tailors' pattern-drafting skills.

3.2 Study Population

The study population comprised 110 local tailors operating in the Kalulushi District of the Copperbelt Province, Zambia. The population was defined as the target group from which the researcher draws responses (Kombo & Tromp, 2006). This population included all tailors operating from the Kalulushi Main Market and surrounding small workshops within the district. The population was considered homogeneous in work environment and clientele but heterogeneous in years of experience and training background.

3.3 Sample Size and Sampling Procedure

A sample of 50 local tailors was selected from the estimated population of 110 using simple random sampling. According to Creswell (2014), a sample is a small group studied from a larger population, from which data are collected and analysed, and inferences are made about the population. Simple random sampling was used to ensure each member of the population had an equal chance of selection, minimising selection bias. The sample size of 50 represents approximately 45% of the total population, which is considered adequate for descriptive survey research (Kothari, 2004).

This larger sample size enhances the representativeness of the findings and reduces the margin of error compared to a smaller sample.

3.4 Research Instrument

The researcher used a structured questionnaire as the primary data collection instrument. The questionnaire contained closed-ended questions and Likert-scale items. According to Creswell (2014), the questionnaire upholds respondents' confidentiality and eliminates the opportunity for researcher bias in the study. The questionnaire included items specifically designed to assess knowledge and practices in pattern drafting, including questions on the definition of pattern drafting, the steps involved in collar drafting, and the relationship between basic pattern drafting and collar construction. The questionnaire was divided into two sections: Section A collected demographic information, while Section B contained Likert-scale items measuring knowledge of pattern drafting.

3.5 Validity and Reliability

To ensure the instrument measured what it purported to measure, the researchers submitted it to experts at Rockview University, who assessed its face and content validity and its suitability for the target population. Content validity refers to the extent to which the questions adequately represent the constructs being measured. Face validity refers to the appearance that an instrument measures what it is supposed to measure. A pilot study assessed the instrument's reliability before the main data collection. Reliability refers to the consistency and stability of the measurement. The pilot study involved 10 tailors who were not part of the main sample. Feedback from the pilot study was used to refine the wording of certain questions and to ensure that the Likert-scale items were clearly understood. The instrument's Cronbach's alpha was 0.82, indicating good internal consistency.

3.6 Data Collection Procedure

After successfully presenting the research proposal, the researcher obtained a letter of introduction from the Rockview University Faculty of Education, Department of Postgraduate Studies and Research. The researcher then identified the respondents, explained that there were no rewards for participating in the research, and informed them that they could withdraw from the study at any time. The researcher distributed questionnaires to respondents and gave them two days to complete them before collection. The researcher made follow-up visits to collect completed questionnaires. Data collection took place over two weeks in March 2020.

3.7 Data Analysis

The data collected were analysed using descriptive statistics. Data were entered into Statistical Package for the Social Sciences (SPSS) version 26 and Microsoft Excel. Descriptive statistics, including frequencies and percentages, were computed for all variables. The Likert-scale responses were analysed by calculating the frequency and percentage of respondents selecting each response option. Data were presented in tables for ease of interpretation. No inferential statistics were computed as the study aimed only to describe the current state of pattern drafting skills.

3.8 Ethical Considerations

The researcher took steps to ensure that ethical guidelines were followed with the assistance of the supervisor. Informed consent, confidentiality, and the purpose of the research were clearly explained to respondents. The researcher ensured that all data obtained was kept confidential. Respondents were assured that their participation was voluntary and that they could withdraw at any time without penalty. The researcher collected no identifying information to ensure anonymity. The Rockview University Research Ethics Committee approved the research protocol.

IV. FINDINGS & DISCUSSION

4.1 Response Rate

A total of 50 questionnaires were distributed to the target research sample, and all were duly completed, representing a 100% response rate. This high response rate strengthens the validity of the findings and reduces the risk of non-response bias.

4.2 Demographic Characteristics of Respondents

The demographic analysis revealed that 68% of respondents were male and 32% were female, reflecting the gender distribution of the tailoring industry in Kalulushi District. In terms of years of experience, 40% had between 1 and 3 years, 36% had between 4 and 6 years, 16% had between 7 and 9 years, and 8% had 10 years or more. Regarding educational background, 28% had no formal education, 56% had a Grade Nine certificate, 16% had a Grade Twelve certificate, and none had tertiary education.

4.3 Independent Variable: Pattern Drafting Knowledge

4.3.1 Understanding of Pattern Drafting Concepts

Table 1 presents respondents' knowledge of whether pattern drafting is the art of designing the outline of the plan or arrangement for sewing a cloth.

Table 1

Knowledge that Pattern Drafting is Designing the Outline for Sewing

Response	Frequency (n)	Per cent (%)
Disagree	11	22.0
Neutral	27	54.0
Agree	12	24.0
Total	50	100.0

The data show that 54% of respondents (n=27) were neutral on this statement, while 22% (n=11) disagreed, and only 24% (n=12) agreed. This finding indicates that most respondents either were uncertain about or disagreed with the fundamental definition of pattern drafting. Only 24% of respondents demonstrated a clear understanding of this foundational concept.

4.3.2 Knowledge of Systematic Steps in Collar Drafting

Table 2 presents respondents' knowledge of whether drafting the men's shirt collar requires strictly following various steps.

Table 2

Knowledge that Drafting a Men's Shirt Collar Requires Strictly Following Steps

Response	Frequency (n)	Per cent (%)
Disagree	9	18.0
Neutral	33	66.0
Agree	8	16.0
Total	50	100.0

The data show that 66% of respondents (n=33) were neutral on this statement, while 18% (n=9) disagreed, and only 16% (n=8) agreed. This finding indicates that most respondents were either uncertain or disagreed that collar drafting requires systematic adherence to steps. The very low agreement rate (16%) suggests that most local tailors do not approach collar construction as a procedural, step-by-step process.

4.3.3 Knowledge of Basic Pattern Drafting as Foundation

Table 3 presents respondents' knowledge of whether men's shirt collar drafting usually relies on basic pattern drafting as a foundation.

Table 3

Knowledge that Men's Shirt Collar Drafting Relies on Basic Pattern Drafting

Response	Frequency (n)	Per cent (%)
Disagree	13	26.0
Neutral	29	58.0
Agree	8	16.0
Total	50	100.0

The data show that 58% of respondents (n=29) were neutral on this statement, while 26% (n=13) disagreed, and only 16% (n=8) agreed. This finding indicates that most respondents were either uncertain about or disagreed with the claim that proper collar construction depends on foundational pattern drafting skills. The low agreement rate (16%) suggests that most local tailors do not recognise the hierarchical relationship between basic pattern drafting and specialised collar construction.

4.4 Dependent Variable: Men's Shirt Collar Quality

4.4.1 Assessment of Collar Quality

Table 4 presents the assessment of men's shirt collar quality based on respondents' self-reported outcomes.

Table 4*Perceived Quality of Men's Shirt Collars Produced*

Quality Indicator	Frequency (n)	Per cent (%)
Consistently high quality	6	12.0
Occasionally high quality	14	28.0
Inconsistent quality	18	36.0
Consistently poor quality	12	24.0
Total	50	100.0

The data show that only 12% (n=6) of respondents consistently produced high-quality collars, while 28% (n=14) occasionally produced high-quality collars. The majority, 36% (n=18), reported inconsistent quality, and 24% (n=12) reported consistently poor quality. Overall, 60% of respondents acknowledged inconsistent or poor collar quality.

4.4.2 Common Collar Defects Observed

Table 5 presents the common collar defects respondents observed in their own work.

Table 5*Common Collar Defects Observed*

Defect Type	Frequency (n)	Per cent (%)
Asymmetrical collars	22	44.0
Collars that do not lie flat	18	36.0
Poor fit around the neck	14	28.0
Sagging collars	10	20.0
Difficulty wearing necktie	8	16.0

Note: Respondents could select multiple defects, so percentages do not sum to 100%.

The most commonly reported defect was asymmetrical collars (44%), followed by collars that do not lie flat (36%), poor fit around the neck (28%), sagging collars (20%), and difficulty wearing a necktie (16%).

4.5 Relationship Between Pattern Drafting Knowledge and Collar Quality

4.5.1 Cross-Tabulation of Pattern Drafting Knowledge and Collar Quality

Table 6 presents the cross-tabulation of respondents' understanding of pattern drafting concepts and their perceived collar quality.

Table 6*Cross-Tabulation: Pattern Drafting Knowledge by Collar Quality*

Pattern Drafting Knowledge	Consistently High Quality	Occasionally High Quality	Inconsistent Quality	Consistently Poor Quality	Total
Agree (n=12)	5 (41.7%)	4 (33.3%)	2 (16.7%)	1 (8.3%)	12
Neutral (n=27)	1 (3.7%)	8 (29.6%)	13 (48.1%)	5 (18.5%)	27
Disagree (n=11)	0 (0.0%)	2 (18.2%)	3 (27.3%)	6 (54.5%)	11
Total	6	14	18	12	50

The data reveal a clear pattern: tailors who agreed with the definition of pattern drafting were more likely to report consistently high collar quality (41.7%). In comparison, those who disagreed were more likely to report consistently poor collar quality (54.5%). Among those who were neutral, the majority (48.1%) reported inconsistent quality.

4.5.2 Cross-Tabulation: Systematic Steps Knowledge and Collar Quality

Table 7 presents the cross-tabulation of respondents' knowledge of systematic steps and their perceived collar quality.

Table 7*Cross-Tabulation: Systematic Steps Knowledge by Collar Quality*

Systematic Steps Knowledge	Consistently High Quality	Occasionally High Quality	Inconsistent Quality	Consistently Poor Quality	Total
Agree (n=8)	4 (50.0%)	2 (25.0%)	1 (12.5%)	1 (12.5%)	8
Neutral (n=33)	2 (6.1%)	11 (33.3%)	14 (42.4%)	6 (18.2%)	33
Disagree (n=9)	0 (0.0%)	1 (11.1%)	3 (33.3%)	5 (55.6%)	9
Total	6	14	18	12	50

The data show that 50% of tailors who agreed that systematic steps are required reported consistently high collar quality, compared to none (0%) among those who disagreed. Among those who disagreed, the majority (55.6%) reported consistently poor quality.

4.5.3 Cross-Tabulation: Basic Pattern Drafting Knowledge and Collar Quality

Table 8 presents the cross-tabulation of respondents' knowledge of basic pattern drafting as a foundation and their perceived collar quality.

Table 8*Cross-Tabulation: Basic Pattern Drafting Knowledge by Collar Quality*

Basic Pattern Drafting Knowledge	Consistently High Quality	Occasionally High Quality	Inconsistent Quality	Consistently Poor Quality	Total
Agree (n=8)	4 (50.0%)	3 (37.5%)	1 (12.5%)	0 (0.0%)	8
Neutral (n=29)	2 (6.9%)	9 (31.0%)	14 (48.3%)	4 (13.8%)	29
Disagree (n=13)	0 (0.0%)	2 (15.4%)	3 (23.1%)	8 (61.5%)	13
Total	6	14	18	12	50

The data show that 50% of tailors who agreed that collar drafting relies on basic pattern drafting reported consistently high collar quality, while none (0%) among those who disagreed reported high quality. Among those who disagreed, the majority (61.5%) reported consistently poor quality.

4.3 Discussion

4.3.1 Understanding of Pattern Drafting Concepts

The finding that 54% of respondents were neutral and 22% disagreed with the definition of pattern drafting is particularly significant, as it reveals a fundamental disconnect between local tailors' practices and the conceptual foundations of garment construction. Pattern drafting is the art of designing the outline of a sewing plan, beginning with taking body measurements. The fact that most respondents were uncertain or disagreed with this definition suggests that local tailors do not conceptualise their work as involving "designing" or "planning" in the formal sense. Instead, they appear to rely on direct copying, tracing, or freehand cutting without systematic measurement.

This finding must be interpreted within the broader context of skills development in Zambia's informal sector. The World Bank (2024) report on skills development for youth in Zambia highlights that many graduates possess theoretical knowledge but lack practical industry-related competencies. For local tailors in Kalulushi, the reverse appears to be true: they have practical experience but lack the theoretical framework needed to understand why certain techniques are necessary. This lack of theoretical knowledge is not merely a minor gap; it is a fundamental barrier to quality improvement.

The high proportion of neutral responses (54%) on this question is particularly telling. In survey research, neutral responses can indicate that respondents do not understand the question, lack sufficient information to form an opinion, or are unwilling to reveal their lack of knowledge (Kothari, 2004). Given the fundamental nature of the question, which asks about the very definition of pattern drafting, the most likely interpretation is that respondents genuinely do not know what pattern drafting entails. This suggests that the concept of "pattern" itself may be alien to local tailors, who may view garment construction as cutting fabric directly from approximate measurements rather than creating paper patterns first.

This finding aligns with research on informal apprenticeships in Sub-Saharan Africa, in which Lave and Wenger (1991) describe informal learning as "legitimate peripheral participation," in which learners gradually acquire skills through observation and imitation within a community of practice. While this model is effective for transmitting observable, routine skills, it is less effective for transmitting the abstract, theoretical knowledge that underpins systematic pattern drafting. Nwadi and Ezanwu (2024) found similar patterns in Southeastern Nigeria, where only 28% of informal tailors demonstrated adequate knowledge of flat pattern drafting techniques.

4.3.2 Knowledge of Systematic Steps in Collar Drafting

The finding that 66% of respondents were neutral and 18% disagreed that drafting men's shirt collars requires strictly following steps indicates a profound lack of awareness of systematic construction processes. Rajput et al., (2012) emphasised that drafting the men's shirt collar involves several steps that must be followed strictly, including laying out lengthwise measurements, drawing the collar stand height, extending the button stand, shaping the edges, determining the collar length, and adding seam allowances.

The lack of this systematic knowledge among local tailors means each collar is constructed differently, resulting in inconsistent outcomes. Without a standardised procedure, quality cannot be reliably reproduced across garments. The high proportion of neutral responses (66%) suggests not that tailors disagree with the statement, but that they lack a framework for evaluating it. The concept of "steps to be followed strictly" may be foreign to a mode of production that is improvisational and experience-based rather than procedural and rule-based.

This finding has important implications for intervention design: training programmes cannot simply provide information about correct steps; they must first establish the value of systematic, repeatable procedures. This finding is consistent with the broader challenges facing technical and vocational education in Zambia. The International Labour Organisation (ILO, 2017) found that many TVET institutions in Sub-Saharan Africa lack modern equipment and qualified instructors, leaving graduates ill-prepared for the demands of the informal sector. Without formal training, tailors develop their own methods through trial and error, which may work for basic garments but fall short for specialised elements such as collars.

4.3.3 Knowledge of Basic Pattern Drafting as Foundation

The finding that 58% of respondents were neutral and 26% disagreed that men's shirt collar drafting relies on basic pattern drafting as a foundation is the most theoretically significant finding of this study. Okorie (2000) stated that creativity and knowledge of measurements are imperative characteristics of garment designers, and that drafting men's shirt collars usually relies on basic pattern drafting as a foundation or master pattern. The basic pattern for men's wear comprises several measurements to achieve a custom fit, including neck, neckband, shoulder, chest, centre front length, centre back, back width, waist, arm length, arm circumference, and sleeve length (Musheno, 1980).

Rejecting this foundational relationship suggests that local tailors do not use a systematic approach to deriving collar patterns from basic body measurements. Instead, they may use rule-of-thumb approximations or trace existing garments. This approach may produce acceptable results for simple, familiar collar styles but fails when confronted with variations in body shape, fabric type, or design specifications. Without foundational pattern-drafting knowledge, tailors cannot easily adapt patterns to new styles or systematically troubleshoot fit problems. Drafting is one of the most significant competency gaps among informal tailors in Zambia, confirming that this finding reflects a broader national pattern.

This finding must be understood in relation to the broader economic context of Kalulushi District. The World Bank (2020) noted that Sub-Saharan Africa has the highest informal employment rate in the world, exceeding 85% in some countries. In this context, the pattern-drafting deficiencies identified in this study should not be viewed as failures of individual tailors but rather as rational adaptations to structural constraints. The informal apprenticeship system, while limited in its ability to transmit theoretical knowledge, remains the most accessible and culturally embedded pathway to skills acquisition.

4.3.4 Relationship Between Pattern Drafting Deficiencies and Collar Quality

The findings of this study must be understood in relation to the broader pattern of skills deficiencies documented in the literature. The failure to recognise pattern drafting as foundational directly explains why local tailors struggle with collar construction. If tailors do not use systematic pattern drafting, they will not understand design variables, such as collar stand height, or technical requirements, such as seam allowances. The literature presents a coherent picture: informal skills development leads to superficial declarative knowledge but not deep procedural knowledge, which in turn results in the absence of systematic pattern-drafting practices and ultimately produces poor collar quality.

These findings have significant economic implications. Without systematic pattern drafting, local tailors cannot achieve the consistency and precision required for high-quality men's shirts. This limits their ability to compete with imported garments produced using industrial pattern-making techniques. However, the solution is not simply to import industrial techniques wholesale but to develop context-appropriate adaptations. Flat-pattern drafting can be taught using minimal equipment, including paper, pencil, ruler, and tape measure, and can be scaled to the resources available to local tailors.

Recent initiatives in Zambia demonstrate the feasibility of such approaches, including the Noah Mapalo Skills Training Centre and the Ubuyantashi project, which provide structured training in patternmaking and design within low-income communities. The ILO (2022) also recommended targeted interventions to strengthen pattern drafting

competencies in Sub-Saharan Africa, including developing context-appropriate training materials and establishing cooperative resource banks.

4.3.5 Interpreting Neutral Responses

An important consideration in interpreting these findings is the high proportion of neutral responses across all three knowledge questions. While this study interprets neutral responses as indicating a lack of knowledge, it is important to acknowledge alternative explanations. In survey research, neutral responses can also indicate genuine ambivalence, lack of interest in the question, or reluctance to reveal a lack of knowledge (Kothari, 2004). Among low-literacy populations, neutral responses may also reflect uncertainty about the question's meaning or the Likert-scale format itself.

Given that 56% of respondents had a Grade Nine certificate or less, literacy and numeracy limitations may have influenced response patterns. Respondents with limited reading skills may have selected neutral options when they did not fully understand the question. Additionally, respondents may have been reluctant to reveal their lack of knowledge, leading them to select neutral rather than disagree. However, the consistent neutral response pattern across all three questions, combined with the very low rates of agreement (16-24%), suggests limited knowledge is the most likely explanation.

4.3.6 Implications for Practice

This study's findings have several implications for practice. The Technical and Vocational Education and Training Authority (TEVETA) should develop structured training programmes in flat pattern drafting techniques that are adapted to local resource constraints, accessible to tailors with low levels of formal education, and that recognise prior learning through informal apprenticeships. The ILO (2022) recommends that such programmes include practical, hands-on training using locally available materials and be delivered in accessible locations, such as marketplaces, to minimise disruption to tailors' work.

Local tailoring associations, in partnership with the Kalulushi District Council, should facilitate the creation of cooperative resource banks of standardised patterns accessible to members, enabling tailors to share patterns and techniques while leveraging existing social networks. This approach aligns with the ILO's (2023) Quality Apprenticeships Recommendation, which emphasises collaborative approaches to skills development. The Ministry of Small Business Development should support the establishment of continuing professional development programmes focused on pattern drafting skills, offered at low cost and delivered in accessible locations such as marketplaces to minimise disruption to tailors' work. This approach aligns with the World Bank's (2024) recommendation for targeted skills development interventions in the informal sector.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Based on the findings, local tailors in Kalulushi District have a limited understanding of pattern drafting concepts, with only 24% of respondents demonstrating clear knowledge of what it entails. Most tailors do not approach collar construction as a systematic, step-by-step process that requires strict adherence to established procedures, and most do not recognise that proper collar construction depends on foundational pattern-drafting skills. The study concludes that deficiencies in pattern drafting skills among local tailors are a primary factor contributing to poor-quality men's shirt collars. Without systematic pattern drafting, collars are constructed freehand, without reference to standardised measurements or proven patterns, resulting in inconsistent, poor-quality outcomes. The pattern drafting deficiencies identified are not merely technical gaps but reflect a fundamentally different conceptualisation of garment construction as improvisational rather than systematic, an approach which, while culturally embedded and accessible, is inadequate for producing the consistent, high-quality collars required for men's shirts.

5.2 Recommendations

Structured Training Programmes: The Technical and Vocational Education and Training Authority (TEVETA) should develop structured training programmes in flat pattern drafting techniques. These programmes should adapt to local resource constraints, be accessible to tailors with low levels of formal education, and recognise prior learning through informal apprenticeships. Programmes should be delivered in accessible locations such as marketplaces to minimise disruption to tailors' work. **Cooperative Pattern Banks:** Local tailoring associations, in partnership with the Kalulushi District Council, should facilitate the creation of cooperative resource banks of standardised patterns accessible to members. This approach would enable tailors to share patterns and techniques while leveraging existing social networks. **Continuing Professional Development:** The Ministry of Small Business Development should support

the establishment of continuing professional development programmes focused on pattern drafting skills. These programmes should be low-cost and delivered in accessible locations to minimise disruption to tailors' work.

Integration into Apprenticeship Training: Formal training institutions and master tailors should integrate pattern drafting instruction into apprenticeship training programmes, ensuring that theoretical knowledge accompanies practical skills acquisition. **Development of Context-Appropriate Resources:** Training providers should develop context-appropriate pattern drafting resources, including simplified manuals, visual guides, and video tutorials that tailors with low literacy levels can access.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Funding Declaration

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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