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TOPIC:

An analysis on the quality of school uniforms produced by small scale fashion entrepreneurs in Zimbabwe towards the design and development of digital patterns.

Declaration

I, Lillian Zindonda, do hereby declare that this dissertation is the result of my own investigation and research, except to the extend indicated in the acknowledgement, references and comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.



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Abstract

The purpose of this study was to develop an understanding of the quality of school uniforms being produced by small scale fashion entrepreneurs in Zimbabwe towards the designing and development of digital patterns. Zimbabwe has become home to fashion entrepreneurs with most of them embarking on the production of school uniforms due to the decline of most large clothing industries. Most of the small scale fashion entrepreneurs are failing to produce standard quality school uniforms. The study is underpinned by the prescriptive design theory. The study was carried out in Mashonaland west province of Zimbabwe among 20 small scale fashion entrepreneurs, 10 learners, 10 guardians and 2 school authorities who were the school uniforms consumers. Data was collected through questionnaire, interview, and observation. Thematic analysis was done on the qualitative data while quantitative data was analyzed using descriptive statistics. The study found out that the quality of the school uniform being produced by the majority of small scale fashion entrepreneurs were of low quality, which ranged from the uniforms with parts which were not proportional, uniforms which were too tight or too loose on the learner, some with crotch lines poorly shaped. The study also revealed that most of the small scale fashion entrepreneurs lacked expertise in pattern making which resulted in the production of ill-fitting school uniforms. The study revealed that the parents who were school uniform consumers were buying the school uniforms from the small scale fashion entrepreneurs because of the cheap prices which were way below the price of school uniforms in retail shops. The study concluded that fashion entrepreneurs have challenges in pattern making and grading for them to make good quality school uniforms. The study recommended the fashion entrepreneurs to have access to low cost digital patterns for school uniforms. As a recommendation a set of school uniforms patterns were designed and prototyped ready for commercial production.

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Dedication

This research is dedicated to my late parents Philip Tozivepi Zindonda and Milka Zindonda, my source of inspiration. I hope I have fulfilled your wishes mom and dad.

Acronyms and abbreviations

ESAP..... Economic Structural Adjustment Programme

COVID Coronavirus Disease

CAD Computer Aided Design

2D Two Dimensional

3D Three Dimensional

n..... Number

MMale

F Female

O' LevelOrdinary Level

A' Level Advanced Level

NFC National Foundation Certificate

NC National Certificate

NDNational Diploma

HND Higher National Diploma

CM Centimeter

M Meter

TB True Bias

CF Centre Front

CB Center Back

F Front

B Back

SS Side Seam

RS Right Side

WS Wrong Side

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CHAPTER 1: BACKGROUND OF THE STUDY

1.1 Introduction

School uniforms are essential in the Zimbabwean schooling system and all Learners are compelled to put on school uniforms regardless of their social background. The quality of school uniforms being produced by some small scale fashion entrepreneurs does not meet the dimensions of quality of a standard school uniform. The learners have school uniforms with fitting challenges ranging from being too tight or too loose and unproportioned garment parts. This research study mainly focused on analyzing the quality of school uniforms being produced by small scale fashion entrepreneurs in Zimbabwe.

1.2 Background to the study

The Zimbabwe Textiles and Clothing industry has been a leading contributor to the growth and development of the manufacturing sector and creating a lot of employment opportunities not only in the textile industries but also other related sectors such as cotton growers, spinners and weavers (Nyoni, 2015). However, the government introduced economic structural adjustment program (ESAP) in the 90s resulting in a number of textiles and clothing industries downsizing in their operations. Sithole, Mutungwe, Chirimuta and Muzenda (2016) point out that by the end of 1999 a total of 100 clothing firms and 6 textile firms had permanently shut down. This led to most clothing industries retrenching workers and a number of people lost their jobs (Sithole et al, 2016). Most of the retrenched workers and other jobless individuals resorted to small scale entrepreneurial activities. Small scale fashion entrepreneurship became popular in Zimbabwe with most venturing into garment construction. The emergence of fashion entrepreneurship in Zimbabwe has captured a large clientele base among the consumers, due to the economic hardships that the country is currently experiencing. As such most consumers cannot afford to get apparel from fashion retail shops (Nyoni & Bonga, 2018). The most visible evidence of growth of small scale garment making is the increase in garment sewing found in the backyards of most cities, towns and in rural areas with most of the entrepreneurs specializing in school uniforms. This has made fashion entrepreneurs flourish in their business leading to a substantial growth in fashion business (Mpofu, 2021). Small-scale school uniform making has become the

livelihood of most Zimbabweans. Little is known about the quality of school uniforms they produced and the methods they use in garment cutting.

The wearing of school uniforms is a key social aspect of the Zimbabwean school system. In all the schools throughout the country, learners are expected to present themselves in school uniforms. Even though learners in Zimbabwe ought not to have uniforms to attend school, school uniforms provide a valuable role in our society. It serves to curtail the appearance of those learners who come from very poor backgrounds. While in uniform, the less privileged learners do not feel humiliated of what they are wearing as they are dressed like everyone else at the school. Behling (1994) asserts that clothing offers respectability and prevents man from being ashamed. The respectability is what the uniform affords to the poor learners. Uniforms are therefore, a permanent feature of the school system in Zimbabwe and guardians are expected to buy and ensure that their learners are dressed in school uniforms like others. As such the business of manufacturing uniforms is big in Zimbabwe.

Due to the economic hardships that the country is experiencing, most consumers of school uniforms cannot afford to buy school uniforms from reputable retail shops as the prices are too high (Gwaze, 2023). Guardians of various learners, who are the major consumers of school uniforms, resort to buying school uniforms from informal small to medium uniform manufacturers (Chinobva, 2014). However, concerns have been raised by some school authorities on the quality of uniforms made by some of the informal small scale uniform manufacturers that lead to some schools resorting to making their own uniforms for their learners (Gwaze, 2023). Past studies contend that quality is a dynamic concept that highly depends on the current context and situations hence requiring frequent re-definition (Inyo & Githii, 2022). Quality is a very important factor in a school uniforms. (Piippo, Niinimak and Aakko, 2022) assert that quality is the performance to standard whilst (De Klerk and Lubbe, 2006) view it as meeting customer needs and satisfy the customer. A garment should not only cover the body but should be of good quality, pleasing to look at and comfortable to wear at the same time being functional.

Dimensions of quality of a finished garment consist of good pattern making, suitable material, correct size, and good construction combinations that guarantee functionality, safety,

performance and aesthetic value of the product. Although some of the small scale fashion entrepreneurs have knowledge and skills in garment construction, (Brenton and Hoppe, 2007) bemoaned that some of the fashion entrepreneurs display poor pattern making techniques hence end up producing poor quality garments. Observations made showed that most of the entrepreneurs are producing school uniforms with fitting challenges possibly emanating from poor pattern making expertise, poor material and from poor garment construction skills. Pattern making is the foundation of all textile apparel. If patterns are poorly produced the end products will have unproportioned product sections, too small or oversized products and ill fitted garments. The quality of a finished school uniforms should satisfy the learner. As such the school uniforms should look attractive and offer values such as self-esteem, respectability, status and confidence to the pupils. As uniforms are a permanent feature of the school system in Zimbabwe, it would be informative to examine the quality of the uniforms produced by small scale manufacturers with a view to enhance the manufacturing of school uniforms. The section below presents the statement of the problem.

1.3 Statement of the problem

The wearing of school uniforms is a key social aspect of the Zimbabwean school system. In all the schools throughout the country, learners are expected to present themselves in school uniforms. Due to the economic hardships that the country is experiencing, most consumers of school uniforms cannot afford to buy school uniforms from reputable retail shops as the prices are too high (Gwaze, 2023). Guardians of various learners, who are the major consumers of school uniforms, resort to buying school uniforms from informal small scale fashion entrepreneurs (Chinobva, 2014). However, concerns have been raised by some school authorities on the quality of uniforms made by some of the small scale fashion manufacturers that lead to some schools resorting to making their own. As uniforms are a permanent feature of the school system in Zimbabwe, it would be informative to examine the quality of the uniforms produced by small scale fashion entrepreneurs with a view to enhance the manufacturing of school uniforms they make in Zimbabwe.

1.4 Research Objectives.

The main objective of the study is to analyze the quality of schools uniforms made by small scale fashion entrepreneurs in Zimbabwe.

The objectives of the study are to:

- Examine the quality of school uniforms made by small scale fashion entrepreneurs.
- Establish challenges faced by small scale fashion entrepreneurs in producing quality school uniforms.
- Develop strategies that can mitigate challenges faced by small scale fashion entrepreneurs in producing quality school uniforms.

1.5 Research questions.

- What is the quality of school uniforms made by small scale fashion entrepreneurs?
- Which challenges are faced by small scale fashion entrepreneurs in producing quality school uniforms?
- How can the quality of school uniforms made by small scale fashion entrepreneurs be improved?

1.6 Purpose of the study

The purpose of this research is to analyze the quality of school uniforms produced in Zimbabwe with the view to design digital patterns for fashion entrepreneurs in Zimbabwe. The focus is to create digital patterns for school uniforms in Zimbabwe that can be accessed by fashion entrepreneurs so that they can manufacture high quality standardized uniforms.

1.7 Significance of study

Analysis of the quality of school uniforms produced by small scale fashion entrepreneurs and designing of digital patterns will make the production of school uniforms simpler, more collaborative and more cost effective. The study of quality will enable small scale fashion entrepreneurs to produce products that are free from sewing defects. This will improve productivity, efficiency and will be cost effective and leads to customer satisfaction. The study of quality will enable the small scale fashion entrepreneurs to meet customer specifications, reduces wastage of resources and will empower the small scale fashion entrepreneurs to build a stronger customer base. This will open opportunities for small scale fashion entrepreneurs in Zimbabwe who have the sewing skills but lack pattern making techniques. The designing of Digital patterns will be an open source tool which is an ideal mechanism for empowering fashion entrepreneurs with ready to use standard patterns and will be a positive step to utilization of digital technology in clothing production. Digital patterns are more reliable and easy to interpret, reducing chances

of material wastage and mistakes encountered during the construction of a garment. The digital patterns may help to resuscitate the fashion industry which is depreciating due to the influx of second hand clothes and cheap clothes from the Asian countries that have flooded the fashion market. The limitations and delimitations for this study are explained in the coming paragraphs.

1.8 Limitations

The Novel Corona Virus pandemic which has forced the country into several lockdowns has affected data collection since intercity travelling was banned. Due to fear of the deadly disease people were not willing to associate with strangers. High risk of contracting Covid-19 by the researcher while collecting data was the most limitation experienced by the researcher. The research became too expensive since some small scale fashion entrepreneurs were not willing to undergo the interviewing process due to fear of contracting the disease. . To curb this limitation, the researcher strictly observed COVID regulations by wearing masks, use of sanitizers and keeping social distance when conducting interview and observation.

1.9 Delimitations

This research focused on analysing the quality of school uniforms with the view of establishing level of fitness for consumption by consumers and fitment for purpose of the product role or function towards the designing of digital patterns for small scale fashion entrepreneurs in Zimbabwe. The target groups of small scale fashion entrepreneurs were from Chinhoyi and Karoi urban areas, Magunje and Makonde rural areas, Mashonaland West province in Zimbabwe. The small scale fashion entrepreneurs were engaged from the two towns and rural areas in Zimbabwe.

1.10 Assumptions

The research was based on the following assumption.

The quality of school uniforms made by small scale fashion entrepreneurs can effectively change from using the traditional methods of pattern making and embrace the use of digital patterns and make high quality and standardized clothing products.

1.11 Research Layout

This research is arranged into five chapters

Chapter one provides the background of the study, the purpose of study, significance of study, objectives, research questions, limitations and delimitations, assumptions and research layout. Chapter two looks at literature review, presents the basis on which the research findings were discussed. The chapter reviews literature related to theoretical framework, quality of finished garments, garment fit, fashion entrepreneurship in Zimbabwe, challenges faced by fashion entrepreneurs in making patterns for school uniform, role of patterns and pattern making in garment construction, history of pattern making, how small scale fashion entrepreneurs make garment patterns, pattern making methods. Chapter three provides the research methodology of the study. It outlines data collection methods and justification of each of the methods used how data is processed and analysed. This chapter looks at research paradigm, research approach, research design, population, sample and sampling procedure, research instruments, administering of research tools, data analysis and presentation. Chapter 4 comprises research findings analysis and discussions. This chapter includes the presentation of demographic data of small scale fashion entrepreneurs and stakeholders (parents) and research findings which answer the study research questions. Chapter 5 presents the conclusions, recommendations and suggestion of areas for further studies.

1.12 Chapter Summary.

This chapter consisted of the research background where the researcher gave a brief history on the quality of school uniforms being produced by small scale fashion entrepreneurs in Zimbabwe. The statement of the problem which highlights the reasons which prompted the researcher to carry out the research in order to have a better understanding of the quality of school uniforms produced by small scale fashion entrepreneurs, challenges faced by small scale entrepreneurs in their operations and possible solutions to the challenges faced. The research objectives and research question were also presented which seeks answers on why there was the production of ill-fitting school uniforms by some of the small scale fashion entrepreneurs. Significance of the study, limitations and delimitations were also presented in chapter 1. The next chapter reviews related literature on analysis of school uniforms produced by small scale fashion entrepreneurs.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature to this study on the analysis of quality of school uniforms being produced by small scale fashion entrepreneurs in Zimbabwe towards the designing and development of digital patterns. The chapter explored what other scholars have contributed in the world of academia in relation to quality of finished clothing garment, and designed digital patterns. (Bell, 2012) states that literature reviews are any investigation which involves reading what other people have written about the area of interest and gathering information to support arguments. This chapter reviews related literature and research findings from published sources which assist the study process. The headings and theory to be adopted are listed below; Theoretical framework (Prescriptive theory), Conceptual framework, Quality of finished apparel garments, Garment fit, Fashion entrepreneurship in Zimbabwe, Challenges faced by fashion entrepreneurs in making uniforms, Lack of technical skills, Failure to grade patterns, Role of patterns and pattern making in garment construction, History of pattern making, how fashion entrepreneurs make patterns, pattern making methods, Pattern drafting, Draping, Digital pattern making/ computer aided pattern making.

2.2 Theoretical framework

The theoretical framework of this study draws upon the literature of an understanding of the prescriptive design theory propounded by Mansoori & Lack'eus (2019). The prescriptive theory has activities necessary to reach specified goals (McEwen & Willis, 2019). The prescriptive theory approach aims at obtaining the required components for analysis in a structured and systematic way with a great deal of human participation (Riabacke, 2012). This theory increases the knowledge on the analysis of quality and can create incentives to acquire accurate information as much as possible, Bousdekis, Lepenoti & Apostolou (2021) points out that prescriptive theory provides accurate prescriptions facilitating reliable and effective decision making. The prescriptive theory helps researchers to know which solution is best suited for a given problem. Prescriptive theory aims at suggesting the best decision options in order to take advantage of the predicted future utilizing large amounts of data, (Guilly et al., 2016). A key feature of prescriptive theories is that they are intended to influence and change the behavior of actual people (Bell et al., 1988; March & Smith 1995). This study used Mansoori's (2015) three tier framework which constitutes three levels namely logic, model and tactics. Mansoori and

Lacke'us (2019) assert that logic touches on issues that need to be dealt with a higher level of thought and cognition, model acts as an intermediate level bridging thought and action facilitating the designing and development of digital patterns from the prescriber to those seeking assistance. Tactics concern the tools and useful strategies at lower level of action and interaction. The framework can be used for the purposes of generating solutions for improving the quality of school uniforms made by small scale fashion entrepreneurs. Mc Mullen and Shepherd (2006) assert that the higher level of logic represents a supreme way of thinking and guides small scale fashion entrepreneurial action and acts as a reference point in regard to the theoretical foundations of methods. The highest level dealt with analyzing the quality of school uniforms being produced by small scale fashion entrepreneurs, the challenges and the methods of pattern construction, imparting a clear logic to quality issues that helps the small scale fashion entrepreneurs to relate cognitively to digital patterns, (Baron, 2004). The middle level model gives small scale fashion entrepreneurs a way of examining the challenges they face in their business and explore the possible solutions and may conveniently access designed digital patterns. This aspect of the model may facilitate activities through the access of ready to use digital patterns for small scale fashion entrepreneurs in order to produce quality school uniforms. The lower level of tactics prescribes the use of digitalized patterns for school uniforms in line with overarching logic and the summering model. They are often detailed and specify the context of use and the outcomes of action (Mansoori and Lacke'us, 2019). Prescriptive theories help people to decide what to do and how to think in a particular context (Cross & Sproull, 2004). Prescriptive theories are often appreciated for their pragmatic value, in that they help the individual to excel in practice, (Bell et al., 1988; Tietz, 1992). The next section has a theoretical framework which guides the study borrowing concepts from the prescriptive theory.

2.2.1 Conceptual framework

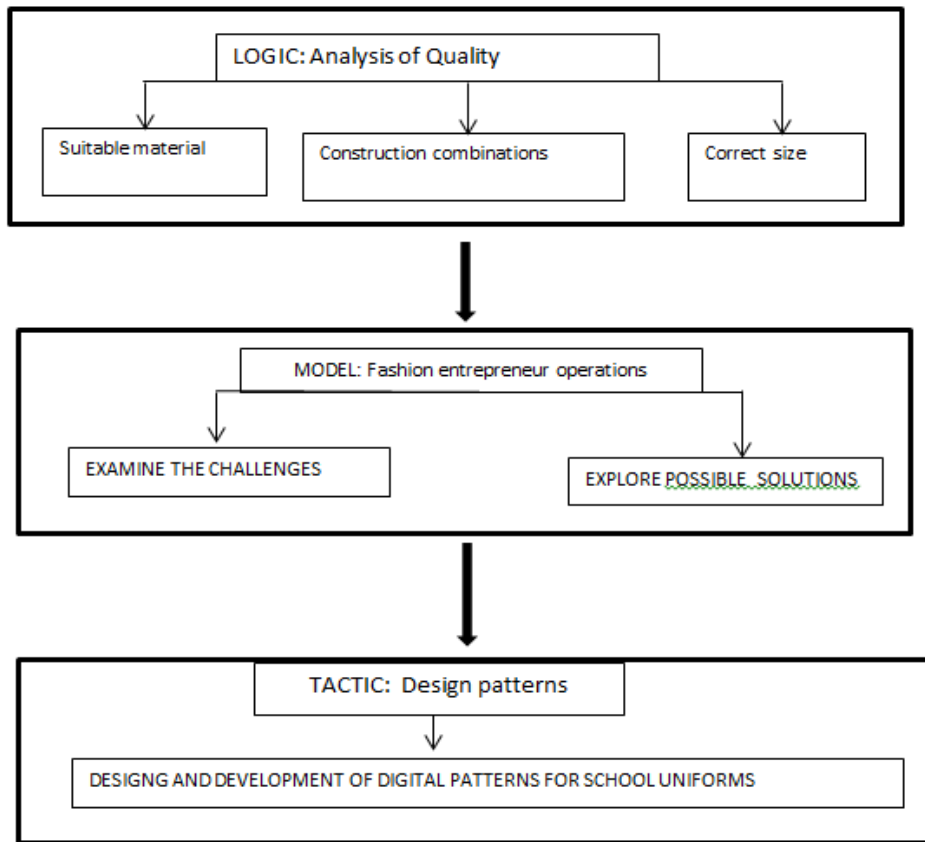


Figure 1: Conceptual framework model

Figure 1 is a conceptual framework adopted by the researcher from Mansoori (2015). The framework explores the analysis of the quality of school uniform being produced by small scale fashion entrepreneurs. The framework comprises of three stages which include, the Logic (analysis of quality), Model, (fashion entrepreneur operations) and Tactic, (designing of patterns). The first stage examines the dimensions of quality of school uniforms. The construction processes, size and the materials used in the production of fashion products were examined. The second stage explored the challenges that the small scale fashion entrepreneurs encountered when producing school uniforms. The challenges include the production of uniforms with fitting challenges, unproportioned parts and poor construction processes. Possible solutions to curb the challenges were sought from the entrepreneurs. The third stage describes the model that may help the entrepreneurs to improve the quality of products they produce. The researcher designed finished patterns which may be used by small scale fashion entrepreneurs to produce school uniforms with improved quality.

2.2.2 Quality of finished apparel garments.

Quality is a very important factor in an apparel garment manufacturing. A garment should not only cover the body but should be of good quality, pleasing to look at and comfortable to wear (Piippo & Niima, 2022). Quality is the performance to standard while others view quality as meeting to customer needs or satisfy the customer (Choudhary et al., 2018). According to Conti, Vesci, Crudele & Pencarelli (2019) dimensions of quality of a finished garment consist of performance, aesthetics, serviceability, durability, conformance and reliability. Piippo et al. (2022) further point out that quality is about suitable material and construction combinations that guarantee functionality, safety and performance of the product. The quality of a finished school uniform should satisfy the learner. Ramkumar & Woo. (2018) argues that fitness for use focuses on how the product performs its intended function for use. Clothing should look attractive and offer values such as self-esteem, respectability, status and confidence. As such school uniforms should be of good quality so that every learner looks the same and there is no class distinction amongst the learners. School uniform plays a very important role, as it serves to minimize the image and appearance of learners who come from very poor families (Nikwane, 1992). Uniforms should create uniformity amongst learners and learners should not be differentiated due to poor quality of school uniforms. Nikwane (1992) also argues that the function and design are very important factors in a school uniform. Clothing should not only cover the skin, but should be well designed, pleasing to look at and comfortable to wear. A school uniform worn daily all year round should be of good quality and its design pleasing to the learners. Learners would enjoy being at school if their school uniform has good quality. Aldrich (2014) states that the basic principles of good design have to operate on the choice of material, the balance in shapes and lines, the most important factor consideration of the function of the garment. Aldrich (2014) further states that the garment can look beautiful and comfortable if cut out using well-constructed patterns. It should provide the wearer with both thermal and tactile comfort. Thermal comfort according to Wallin (1985) ensures that learners are provided with micro-climate in the layers between the skin and clothes. There should be adequate ventilation when it is hot, warmth when it is cold and moisture should be absorbed from the body. Garment fit is also an important aspect in clothing construction.

2.2.3 Garment fit.

Garment fit is a very important factor when considering the quality of school uniforms. Ohaka, Illoeje, Lemchi and Funke (2018) and Illoeje (2018) describe fit as how a piece of clothing conforms to the body. (Brown & Rice, 2001) also describe fit as the relationship between the garment and the body. Learners would enjoy the school environment when their school uniforms fit them well. This explains that a fitted garment is the one that is at ease to the wearer, with adequate room for ease of movement, absence of avoidable creases and bunching of fabrics. Armstrong et. al., (2016) points out that a good fit is achieved when a correct body measurement of the individual is used and when appropriate skills are used in the constructing block patterns. Thus a proper fit of the school uniform should exhibit good appearance, ease of movement, comfort and should balance with the learners figure. Illoeje (2018) points out that clothing with good fit send out positive messages about the wearer and it attracts the viewers' appreciation and comment. School uniforms with fitting challenges appear to be unattractive and lack quality which may lead to learners with ill-fitting uniforms isolating from other learners. People use clothes to convey message about them (Amanah 2022). When a school uniform lacks fit it sends a negative signal and it draws attention to the wearer. School uniforms should be of good fit so that learners should take pleasure in wearing the school uniform and enjoy the learning environment without being restricted by school uniforms with fitting challenges.

2.2.4 Fashion entrepreneurship in Zimbabwe

Lang & Liu (2019) defines fashion entrepreneurship as individuals who have the capacity and are willing to start a business providing any fashion related products or services for a profit. Halдар (2021) describes an entrepreneur as a person who reforms or revolutionise the pattern of production by exploiting an invention or more generally an untried technological possibility of producing a new commodity or producing an old on in a new way, by opening a new source of supply of materials or a new outlet of products. This implies that entrepreneurship is the activity of setting up a business or businesses, taking financial risks. Burke et al. (2020) defines a textile and apparel entrepreneur as a person who creates new fashion firm or sets up a new fashion brand. Fashion entrepreneurship includes two different dimensions; fashion or the creative part which new products are developed in response to current trends, and the entrepreneurship dimension that includes the process of searching, evaluating and exploiting new opportunities in the business (Vecchi & Buckley, 2016). This shows that a fashion entrepreneur is aware of

necessary skills, techniques and knowledge which include, fashion, product life cycle, along with proper lead times and effective merchandising techniques, (Rao, Rekha ,Vorley, Tim & Khan, Zaheer, 2017). A fashion entrepreneur should easily adapt to technological changes and generates new ideas in order to survive in the fashion business. .(Kanchana et al., 2013) argues that an entrepreneur can be regarded as a person who has interactive, skill and motivation to set up a business or enterprise of his own and always looks for high achievement. (R.S.Kanchana et al., 2013) suggest that an entrepreneur discovers and assess opportunities, followed by creation of a new organization, an entrepreneur possesses the ability to see what others cannot see, and while others see complications an entrepreneur sees prospects. (Duggal & Jain, 2019) also suggests that an entrepreneur is advanced with natural characteristics of adventurism, ability to confront dangers, inventive, desire, imagination and anxious to roll out powerful improvements. An entrepreneur is enriched with inborn abilities of adventurism, willingness to face risks, inventive urge, and creativity and is eager to make dynamic changes in the production process, introduce innovations and to find out new uses of raw materials. Kanchana et al., (2013) posit that innovation is the specific tool for fashion entrepreneurs. Entrepreneurs should be highly innovative, visionary and have long term plans in order to thrive in business. Essentially an entrepreneur can be viewed as an individual who has the action, knowledge and inspiration to set up a business. Bolton (2012) Bolton and Lane (2012) suggest that entrepreneurs embark on high levels of risk taking, innovativeness, proactive and opportunity recognition. Fashion entrepreneurs strive to execute the urge, aptitude, inspiration and creative capacity to build a fashion trend. A fashion entrepreneur always searches for new inspirations, responds to them and exploits them as an opportunity to create new fashion trends. Rao (2017) suggests that success in fashion entrepreneurship involves combining design, business and manufacturing knowledge. This means that an entrepreneur should be prepared to survive and thrive through economic changes whether positive or negative. Back up ideas should be in place in the event that there are unforeseen changes with the economy that they are operating in.

2.3 Challenges faced by fashion entrepreneurs in making school uniforms

Fashion entrepreneurs face so many challenges when making patterns such as skills and competences, lack of resources, experience and practice. The fashion entrepreneurs that are equipped with knowledge and skills usually are not willing to share with those facing challenges in the fashion industry. Mckinnery, Bye and Labat (2012) posits that individual pattern makers

may mentally store their experience as a sort of personal theoretical framework used in making future patterns, but rarely is this specific information recorded or shared. Those with knowledge and experience may regard it as a trade secret or the brilliance of an individual (Breslin & Buchanan, 2008, cited in Mckinnery et al., (2012). However, not all of them can develop themselves with the latest knowledge or skills especially if they are self-taught (Hamidah et al., 2018). Those who mentally store their knowledge do not intend to improve their skills with latest technologies so as to enhance their knowledge and skills.

2.3.1 Lack of technical skills.

Fashion entrepreneurs often have challenges in using instructions provided by the author of design. Information may be inadequate. The instructions may rely on a great deal of tacit knowledge, (Mckinnery, Stanley, Plummer, Thompson and Rorah, 2016). With the fashion entrepreneurs some of which lack understanding on the technical terms fail to comprehend the instructions which may accompany designs and patterns. Lack of technical skills to read materials published by tailors. Pattern drafting system relies on the expertise of the user to make use of the scanty instructions (Akubue, 2004). As most pattern drafting will likely be used by people who have an understanding of technical language in pattern making and garment construction.

Entrepreneurs face a great deal of challenges during the course of production in which a pattern may require alterations (Akubue, 2004). With the lack of technical skill that is required in pattern alteration, the fashion entrepreneurs often fail to alter accurately and may lead to varying degrees of drape, shrinkage and give in the final product. Failure to apply technical skill when altering may result in the risk of producing ill-fitting and unsellable garments.

Failure to grade patterns.

Fashion entrepreneurs who lacked technical skills in pattern making often fail to grade the patterns to the next size, especially when they have patterns that are one size and are intending to add or reduce the size. Entrepreneurs with less or no technical skills often have a challenge in pattern balancing. (Baranauskas, & Raišienė, 2022) Pattern balancing plays a major role in the way a garment fits on a person's body. Not well balanced patterns can make a garment to look poorly fitted or unpleasant. Small scale fashion entrepreneurs to acquire pattern grading

techniques in order to mitigate the challenge of poorly graded patterns. Computer literacy is another major challenge which hinders the fashion entrepreneurs to get access to the digital patterns. The fashion entrepreneurs that are equipped with knowledge and skills usually are not willing to share with those facing challenges in the fashion industry. Lack of exposure to latest technologies highly contributes to the failure to access important information regarding improvements and changes in fashion trends.

2.3.2 Role of patterns and pattern making in garment construction.

A pattern is a guide with instructions on how to lay out, cut out and make something. McKinney et al. (2017) posit that pattern making is the art of designing patterns by making templates from which clothing and craft items can be sewn. This tells that pattern making process essentially help fashion entrepreneurs to come out with the exact imagination of a designer from sketch till the real product. The role of pattern making in garment construction as supported by (Naznin & Sultana, 2017), pattern provides a clear idea of right style and accurate measurements of garments. Naznin & Sultana (2017) point out that pattern contains clear information of construction, sewing allowance, grain line and fabric cutting direction. A pattern guides and instructs an individual on how to lay out, cut out and construct an article. Masina, Masawi, Gapa and Zisengwe (2020) also proclaim that pattern making makes cutting easy. A pattern gives less room for mistakes and prevents fabric wastage if used properly. The use of patterns is cost effective, especially when one engages in an economical layout. This helps in the unnecessary wastage of fabrics which may be used for other income generating projects. Kaspar, Wu, Luo, Makatura, & Matusik (2021) points out that pattern usage checks wastage of fabric during cutting and sewing. Pattern is a very important tool as it checks wastage of fabric no matter how little. Patterns are used to determine the amount of fabric required for each particular design and size, thereby lessening the possibilities of having more or less fabric for a particular design. Naznin & Sultana (2017) also support the role of patterns as the patterns suggest and estimate the resources required for constructing a particular style. Patterns have specification tables which helps individuals in the choice of suitable fabrics to use and the notions and accessories that are required in order to come up with a particular garment. Masina et al., (2020) also point out that patterns can be used as a top marker for laying out. The marker pattern enables one to cut different sizes from one marker patterns, this enables bulk cutting of garment pieces thereby

lessening the burden of continuously laying out different sizes. Tsige (2017) points out that patterns enable one to make duplicate of professional garment and can be used in mass production. An existing pattern can also be a basis of developing secondary patterns, whereby the existing pattern can be manipulated to produce new style features. Well-made patterns have instructions that will guide on how the pattern pieces should be laid out on the fabric. With patterns one can creatively manipulate designs, grains and lines in fabrics to produce a fitting garment (Tsige, 2017). Masina et al., (2020) elaborate that this ensures good fitting as well as economic use of fabric and reduces the risk of materials being wrongly cut. When using a pattern one is assured of saving fabric the pattern comes with laying out instructions. Aldrich (2006) asserts that individuals who want unique designs achieve them with pattern alterations. Naznin & Sultana (2017) concur that pattern making process solves all problems in the initial stage which help the bulk production process. An accurate pattern helps to make a proper sample. Aldrich (2006) points out that pattern help to proportion, rhythm and balance of design printed on a fabric, thereby helping to produce high quality garments as the pattern will help to accommodate these principles of design accordingly. A pattern plays a vital role in guiding individuals with little sewing experience.

2.3.3 History of patternmaking

Pattern making is the art of transforming a designer's basic idea for a garment into a real piece of apparel that fits the human body in a satisfying way. Datta and Seal (2018) posit that pattern making is the art of designing patterns and craft items that can be sewn. Historically patterns have a complex story in the fashion industry. The construction of patterns dates back from the 15th century was templates were made using the measurements of an individual and were used for laying and cutting out purposes. Patterns were made only by tailors who had expertise in pattern making and garment construction. Datta and Seal (2018) point out that the seminal art of pattern making began in the fifteenth century. Pattern making has transformed over time to create tailored and styled designs. Singh and Singh (2017) acknowledged that in place of rectangular uncut fabric, pieces were carefully cut as per size and body contour. Patterns started as a limited product to tailors. Datta and Seal (2018) assert that tailors worked meticulously to customize patterns based on their clients personal measurements and clothing was elaborate and solely relegated for the rich. However of lesser means muddled through with old clothes, improvised fashions that were ill fitting, or lived with re-made hand-me-downs and finally

commercial patterns became vital not only to tailors, but for the general public. The onset of the industrial revolution marked the importance of standardized patterns for the success of ready to wear clothing (Datta & Seal, 2018). Many different pattern companies realized that people were prepared to spend money on patterns and began to produce and market patterns in illustrated envelopes with detailed instructions of how to cut and sew a fabric to fit a varieties of body shapes. Pattern drafting developed at the beginning of the 19th century with each new pattern publication becoming better than the previous ones. As patterns became important they started to appear in fashion magazines and periodicals, as either on scale or full size, (Seligman, 1996). Eventually the scaled patterns were invented to full size patterns (Spanabel, 1999). Finally full-size patterns were offered for sale to tailors and dressmakers, then home sewers. However, these patterns have disappeared in the fashion market making it very difficult to access by fashion entrepreneurs especially in Zimbabwe. Therefore the need to come up with digital patterns for school uniforms to curb the challenge.

Besides the use of patterns, tailors and dressmakers also used draping method. Hong et al. (2017) posits that draping is a 3D pattern design is a technique used to make well fitted garments for individuals. It directly implements the pattern design on a mannequin or human body. Draping is a pattern creation that involves draping the fabric over a mannequin to create a 3D shape (Hong et al., 2017). When the designer has reached a desired look the fabric is then transferred to a paper for the final pattern. Most fashion entrepreneurs opted for the use of the draping method as it seemed easier to use, however it requires experience for one to produce well fitted garments. Most of the entrepreneurs rather opt for the other methods as this would end up wasting the fabric.

Patterns could also be produced manually in 2D designs which had two methods, drafting and alteration. These basic patterns are referred to as prototype, sloper or block patterns that have been previously developed and perfected using flat pattern making method (Kozar, Rudolf, Cupar & Jevsnik, 2014). Flat pattern making is devised for developing patterns that control consistency of sizes and fit. Hong et al (2017) suggest that flat pattern is carried out with mathematical formulas and numerical values of standard bodies. The use of this method is difficult to know what final products would look like.

2.3.4 How fashion entrepreneurs make garment patterns

Zimbabwean fashion entrepreneurs use various methods to come up with apparel. The most common method is that of following the model or that of following the pattern from a particular clothing item which is done manually (Suryani et al., 2018). Some use free hand product cutting as a method of making patterns. Thus they use body measurements to draft patterns shapes straight on the fabric. Free-hand product cutting is an act of drafting out designs and styles directly on the fabric and cutting them out (Bakker-Edor, 2018). Through the use of this method of cutting, all dimensions, style lines, seam allowances are drafted straight on the fabric. The individual measurements are marked directly on the fabric in free-hand cutting. Freehand cutting is prone to a lot of mistakes because once a fabric is cut there is no room for adjustments (Bakker-Edor, 2018). Free-hand method of apparel construction may spoil the apparel entirely, thereby wasting the fabric (Shailong & Igbo, 2009). However, this leads to the production of garments with fitting challenges and compromising the quality of the finished garment. In addition, free-hand garment cutting is time consuming and slow, therefore cannot be conveniently used for mass garment production. Free-hand garment cutting has in most instances resulted to poorly fitted apparel and quarrels among fashion entrepreneurs and their clients. Boakye (2010) has stated that, people may prefer ready-to-wear clothes due to the unsatisfactory jobs from some fashion entrepreneurs that use free-hand garment cutting for garment making. Freehand garment cutting in some instances have failed the fashion entrepreneurs in many ways, since no adjustments can be made on a finished or constructed garment. It also results in fabric wastage since once a mistake is made it cannot be rectified. Freehand cutting comes with no instructions and drafts cannot be reused. The free hand garment cutting cannot be tested thereby giving more room for possible mistakes during the course of cutting out. This affects the output by fashion entrepreneurs who use this method for garment cutting. Knock off is another method that the small scale fashion entrepreneurs use to make garment patterns. On this method the ready-made garment is dismantled and used as a pattern to cut out garment sections. However, this method has challenges in coming up with the exact measurements or the exact style.

2.3.5 Pattern making methods.

Fashion entrepreneurs use different methods to come up with patterns, they use to come up with apparel. The methods used are pattern drafting, draping, digital pattern making and these are explained in detail below.

2.3.5.1 Pattern drafting.

Essentially, pattern drafting is the art of translating a designer's basic idea for a garment into a real piece of apparel that fits the human body in a flattering way (Aldrich, 2014). Drafting patterns for clothing production is a skilled practice. The features and technique behind each pattern ensure that garments are made to specification with minimum margin of error. Bray (2003) and Aldrich (2007) point out that drafting can be undertaken by direct, divisional or a combination of systems. Gill and Chadwick (2009) state that in pattern drafting, the pattern outline is plotted as a series of related cardinal points, placed based on dimensions of the body and inclusion of ease. Armstrong (2010) suggests that the first step in pattern drafting is taking of body measurements. She recommends that when taking measurements for pattern drafting, the person should just wear normal underclothes. Aldrich (2014) distinguished that pattern drafting by adopting shapes from pattern can play a vital role in apparel making. Semptress (2010) indicated that flat-pattern drafting, involves using a sheet of paper, pencil and all the pattern drafting tools, and coming out with a pattern based on a set of measurements. Flat pattern drafting is based on commercialized basic patterns with standard measurements but when employed in designing, one makes use of fitting darts to increase apparel fitting (Aldrich, 2014). Hollan (1972) cited by Anikweze (2012) added that flat-pattern has several advantages which include the ability to design patterns to fit into cost-effective fabric layouts, the possibility of restructuring old patterns and outdated clothing into new ones. Pattern drafting enables one to draft the pattern using individual measurements and requires no alterations. Perfect fit is achieved when one use individual measurements. It also ensures ease in determining causes of mistakes during the making of the pattern and how to correct them. By pattern drafting, one can plan properly and organize himself or herself efficiently during construction of apparel (Ma & Yan 2022). According to MacDonald (2010) and Joseph-Armstrong (2010), patterns used in apparel making bring out the good style of the apparel and makes it fit better. Therefore creation of digital patterns for school uniforms is very critical.

2.3.5. 2 Draping method

Draping is another method of pattern making which is used by fashion entrepreneurs. Naznin (2018) describes draping as a method that involves a detailed survey and study of the figure to build up a reliable fitting experience. Draping involves the draping of two dimensional piece of fabric around the form, conforming to its shape, creating a three dimensional fabric pattern. Ease

allowances for movement of the body are also added to make the garment comfortable to wear (Naznin, 2018). This method is an artistic approach in which fashion entrepreneurs make patterns by fitting a piece of material around the body or mannequin so that folds in the fabric produce a style according to the curves of the body. Obinnim and Afipongo (2015) point out that draping, is a method of producing patterns by conforming a fabric to a silhouette, mannequin or human body and then marking, cutting and flattening prototype ensures the style and fit of the garment. Ease allowances for movement of the body are added to make the garment comfortable to wear. The fashion entrepreneurs directly implement the pattern design on the mannequin or human body. Zhang (2015) suggests that after the designer has reached a desired look the fabric is then transferred to paper for the final pattern. Zhang (2015) suggests that, this gives the designer or pattern maker an overview of how the garment will look before making final decisions. This pattern making technique is used to make well fitted garments for individuals. However draping method of pattern making is laborious and time consuming that most of the fashion entrepreneurs hardly uses it. They prefer other pattern making methods which are quick and have high revenue returns in short space of time.

2.3.5.3 Digital pattern making/ Computer-Aided Pattern-making

Due to technological development, making patterns has shifted from paper to computer. Computers are a vibrant element in the fashion industry. Computer aided design (CAD) reduces the demand for manual sketches. Imanyati and Yahya (2018) explain that there are various soft wares for making clothing which are typically used in industries to create clothing patterns such as Browzwear, Tuka Tec, Optitex, Lectra and Geber. CAD software allow the designers to design curves and figures into two dimensional (2D) space, or curves, surfaces and solids in three dimensional 3D objects.

Computer-aided pattern-making and virtualization contains 2D, 2D-to-3D and 3D-to-2D approaches. The 2D approach is an assistance of traditional general pattern-making. Kang and Kim (2000) point out that in the 2D-to-3D CAD approach; digital 2D garment patterns are firstly prepared and amassed through a virtual sewing procedure to produce accurate draping simulation. The 2D-to-3D solutions are useful tools for assessing the visual effects of garment production.

Lim and Istook (2012) state that in the 3D-to-2D approach, a 3D human body model or a 3D garment model is firstly created, and then a 3D flattening technique is applied to flatten the 3D surface of a model for 2D pattern development.

CAD Technology is one of the clothing making media that can be done automatically. Naznin, Tabraz and Sultana (2017) point out that CAD is a design system using computer device and design software. Naznin et al. (2017) posit that the CAD tool allows engineers to plan model and evaluate a product accurately before it is manufactured. The software makes it more efficient to produce accurate clothing patterns. CAD allows a designer to create accurate technical sketches, thereby reducing the working time drastically.

2.4 Chapter summary.

The literature was reviewed based on the research questions and objectives that were set for the study. The in-depth literature review sought to find answers from other authorities on the analysis of the quality of school uniforms being produced by small scale fashion entrepreneurs towards the designing and development of digital patterns. The literature revealed that there is little research on quality of apparel, pattern drafting and digital pattern making in Zimbabwe. Most of the studies conducted took place north Ghana and from the European countries.

Quality and garment fit were examined in detail as these contribute mostly to the overall outlook of the learner. High quality garments with good fit gives the learner self-confidence as the garment should not only cover body but should be of good quality, pleasing to look at and comfortable to wear.

Literature on the methods of pattern construction was being employed by small-scale fashion entrepreneurs and the challenges they encounter when constructing the patterns for school uniforms which leads to the production of poor quality school uniforms which are ill- fitting on the learners. Good fit can only be achieved by use of correct body measurements and when appropriate skills are used in the construction of patterns.

This chapter also examined the theoretical framework, where the prescriptive theory underpins the research. The theory provides accurate prescriptions facilitating reliable and effective decision making. The theory intends to influence and change the methods that the small scale fashion

entrepreneurs are employing to come up with patterns and embrace digital patterns. The next chapter outlines the methodology used in this research.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter covers the research approach, design, research instruments, population and sampling method. It detailed the design and methodologies used to collect, analyze and present the research data.

3.2 Research Paradigm. (Pragmatism)

In this study the researcher adopted pragmatism paradigm, as it is orientated towards solving practical problems in the real world rather than being built on assumptions about the nature of knowledge, (Cresswell, 2014, Hall 2013, Shannon-Baker , 2016). Camron (2011) point out that pragmatism leads to action oriented research procedures. The use of pragmatism asserts that both quantitative and qualitative methods are studying the same phenomenon of analyzing the quality of school uniforms from two different positions either directly describing the phenomenon or indirectly through investigating (Cameron 2011). The mixed research helps to confirm the qualitative research results with qualitative research as it provides a simplified view of reality that is more appropriate for the practical goals of pragmatism and the notion “what works”, (Maarouf 2019). Combining qualitative and quantitative methods is too valuable for generating different types of contributions in the research, (Barnes 2019). The use of this paradigm would support the researcher to be more focused on examining the quality of school uniforms which comprise of the materials, pattern making methods and construction methods, which highly contribute to production of quality school uniforms. . The adoption of the pragmatism paradigm by the researcher would help to give more detailed answers to the research questions and achieve the research objectives. The analysis of the quality of school uniforms would bring in the solutions that would mitigate the challenges the small scale fashion entrepreneurs face which lead to the production of low quality school uniforms. . The small scale fashion entrepreneurs would improve their clientele base if the quality of school uniforms improves. The analysis of quality of school uniforms and the solutions will make the production simpler, more collaborative and more effective. The small scale fashion entrepreneurs will improve productivity, efficiency and it will be cost effective Therefore the researcher adopted pragmatism paradigm to be more focused and to have a deeper understanding of the quality of school

uniforms so as to come up with solutions which may mitigate the challenges that the fashion entrepreneurs are currently facing. The research approach adopted in conducting this study is discussed below.

3.3 Research approach

A research approach is a world view from which one perceives phenomena, (Burns and Groove, 2003). The research approach employed in this research is mixed methods. Tashakkari and Creswell, (2007) point out that mixed methods involves the collection and analysis of both quantitative and qualitative data, and integrating the two sets of results at some point in the research to draw inferences from the qualitative and the quantitative results. Creswell and Clark (2011) argue that by taking this integration, it is hoped to provide better understanding of the of the quality of school uniform being produced by small scale fashion entrepreneurs in order to give more detailed answers to research questions. Teddlie and Tashokkori (2009) posit that combining questionnaires and interviews in a single research study brings together the advantages of breadth and depth associated with these two respective methods. The effect of integrating the results of these two methods is the possibility of providing a more complete picture on quality that can address a range of research questions, which seeks solutions to mitigate the challenges that the small scale fashion entrepreneurs encounter when producing school uniforms, (Johnson & Onwuegbuzie, 2004). By utilizing a mixed method approach researchers can use quantitative data to confirm and test the results of a qualitative data, and qualitative data to confirm and add meaning to quantitative data. Researcher carried out a study in participants (20 small scale fashion entrepreneurs and 10 fashion consumers). The focus is an analysis of the quality of school uniforms produced by fashion entrepreneurs, towards design and development of digital patterns. The use of the approach by the researcher was to have an in depth understanding on the issues of the quality of school uniforms and to gather data that would help in coming up with possible solutions to help mitigate the production of poor quality school uniforms. The designing and development of digital patterns may make the production of school uniforms simpler, more collaborative and more operative and leads to customer's gratification.

3.4 Research design

Research design is a set of methods and procedures used in collecting and analyzing measures of the variables specified in the problem research (Creswell, 2014). Research design is essentially an outline for planning a research and answering research questions. It sets limits for the research

study. It also defines the standards by which the researcher will assess one's results and conclusions. Thus, it is a plan that describes how, when and where data is to be collected and analyzed. The research design outlines the measures for carrying out research study and serves to deliver exact answers to the research questions. It is therefore an investigation that avoids the collection of inappropriate data.

For this investigation, the researcher focused on an analysis of the quality of school uniform garments produced by small scale fashion entrepreneurs, with a view to design and develop digital patterns for fashion entrepreneurs in Zimbabwe. Therefore, this study employed concurrent mixed methods design to validate one form of data with the other form, to transform the data for comparison or to address different types of questions (Cresswell & Clark, 2007).

Concurrent data collection strategies was considered suitable since the research questions strived for a deeper understanding of the views and opinions of participants on the quality of uniforms being produced by fashion entrepreneurs in Zimbabwe. The researcher's option to use the concurrent mixed method design was that in many cases the same individuals can provide both qualitative and quantitative data and the data can easily be compared. The method has complementary effects whereby they cover-up the weakness of the other. Respondents may not answer the questionnaires correctly but may give important and relevant information which might have been missed out due to lack of understanding the questions. This method draws potential strength of both qualitative and quantitative data collection methods.

3.5 Population

Sithole and Manwa (2017) suggest that the population in a research context is any target group of individuals that has one or more characteristics in common that is of interest to the researcher for the purposes of gaining information and drawing. Population is a group of people that the researcher is interested in making inferences.

The accessible population for this study comprises of small scale fashion entrepreneurs who were into school uniforms manufacturing business, school pupils and the parents who are the stake holders and consumers of school uniforms in Mashonaland west province in Zimbabwe. Two urban areas namely Karoi and Chinhoyi and rural areas namely Magunje and Makonde were part of the study population.

3.6 Sample

A sample is a small portion of population selected for observation and analysis. Sampling is the process of selecting a group of people, events, and behaviors in which to conduct a study. In this study 20 fashion entrepreneurs who are into uniform manufacturing business, 10 parents and 10 learners were selected for the study. The researcher used the sample size of 20 small scale fashion entrepreneurs 10 parents and 10 learners due to the lockdowns and movement restrictions experienced during the covid-19 pandemic.

3.6.1 Sampling procedure

In this study the researcher employed random sampling procedures in selecting the participants for the research study. The researcher decided that the sample should involve participants who were producing school uniforms on small scale and sets out to find people who were willing to provide the information by virtue of knowledge and experience (Bernard, 2002). This involved identification and randomly select small scale fashion entrepreneurs that were proficient and well informed with the phenomenon of interest (Cresswell & Clark, 2011). In this research the researcher randomly selected small scale fashion entrepreneurs who were into school uniforms manufacturing business in order to analyze the quality of school uniforms they were producing. The idea behind random sampling was for the researcher to concentrate with a particular characteristic that is able to assist with relevant information on the analysis of the quality of school uniforms being produced by small scale fashion entrepreneurs towards the designing and development of digital patterns.

To ensure selection of small scale fashion entrepreneurs and school uniforms garments the researcher made use of 2 school authorities from two primary schools that were randomly selected in Karoi, Mashonaland West province. The schools used in this study were selected after the researcher observed that most of their learners were having school uniforms with fitting challenges. The school authorities helped in identifying small scale fashion entrepreneurs who were into the production of school uniforms. The school authorities and learners advised and directed the Researcher to where their learners and parents were buying their school uniforms from. Those fashion entrepreneurs who were nominated by fashion consumers and school authorities were considered to take part as participants. (Hall, 2012) states that random sampling has the advantage of accessing participants who have an in depth knowledge on a particular issue. .

Eight fashion entrepreneurs from urban area and twelve from rural area were randomly selected. The use of random sampling helped in the selection of respondents who provided relevant and factual information for discussion (Leedy & Omrod, 2005). The respondents chosen were small scale fashion entrepreneurs venturing in school uniforms, 4 from Chinhoyi, 4 from Karoi, 6 from Hurungwe and 6 from Makonde, Mashonaland West province. A sample of twenty small scale fashion entrepreneurs was drawn out of the population of fashion entrepreneurs and 10 fashion consumers (parents) and 10 students who are the end users of the end products produced by small scale fashion entrepreneurs were drawn out for the study

The researcher also employed purposive sampling to select participants. Purposive sampling is a deliberate choice of a participant due to the qualities the participant possesses, (Etika 2016). The researcher decided what needs to be known on the dimensions of quality and sets out to find small scale fashion entrepreneurs who were into school uniform business and who were willing to provide the information by virtue of knowledge and experience in clothing. Etika (2016) points out that purposive sampling is typically used in qualitative research to identify and select the information-rich cases for the most proper utilization of available resources. This involved the identification of individuals that were proficient and well informed with the phenomenon of interest, (Cresswell & Plano 2011). Purposive sampling was used to sample out 20 small scale fashion entrepreneurs who were into school uniforms manufacturing 10 parents and 10 learners who were the fashion consumers. The selection criteria included specialist knowledge of the research issue, or capacity and willingness to participate and ability to communicate experiences and opinions in an articulate expressive and reflective manner, (Bernard 2002, Oppong 2013). The main goal of purposive sampling was to focus on a particular characteristic of a population that is of interest, which enabled the researcher to answer the research questions.

The 60 school uniforms garment used in the research for data collection were selected from small scale fashion entrepreneurs who were repeatedly mentioned by the school authorities and learners as being major suppliers to the schools. The researcher purposively selected school uniforms which she carefully checked on the material used, construction combinations, the sizes and conformance to the body. The uniforms which could not meet the dimensions of quality were purposively selected for the study.

The parents of the learners who were selected for the study were the ones with children who had ill-fitting school uniforms. The parents were purposively selected to give information since they are well informed with the quality of school uniforms being produced by the small scale fashion entrepreneurs.

The learners with ill-fitting school uniforms were selected using the help of school authorities who helped the researcher to identify them. The researcher critically analyzed the uniforms quality and purposively selected the learners who had uniforms with poor quality material, oversized or tight fitting , parts which were not proportional and poor construction combinations.

3.7 Research instruments

The following research instruments were used by the Researcher to collect data, questionnaires, interviews and observations.

3.7.1 Interviews

The aim of this study was to investigate the quality of school uniforms being produced by small scale fashion entrepreneurs. An interview is a research instrument which was used to collect data and can be conducted in several ways, which include face to face, telephone and virtual interviews, (Desai, Magan, Maposa, Ruiter, Rochat & Mercken,.2022) The purpose of conducting an interview was to explore the responses of small scale fashion entrepreneurs so as to gather more and deeper information on the methods they used to make patterns, the choice of material and the construction processes that resulted in some of them producing poor quality school uniforms with fitting challenges. Face- to- face Interviews were more applicable in this research because the researcher had direct contact with the fashion entrepreneurs and was in a position to gather more information through body language and facial expressions. The researcher had an in-depth analysis, through planned interviews, detailed information on the methods they employed when construction patterns for school uniforms and the challenges they faced during the construction of patterns , the cutting out and the sewing of the school uniform was collected, which enabled proper analysis of the problem. Neumann (2009) expresses that abstract factors like attitudes, feelings and opinions can be successfully evaluated or analyzed through interviews. During the interview process there was easy correction of speech, any misunderstanding and mistakes were resolved easily during the interview because the interviewer and the interviewee were physically present.

3.7.2 Questionnaire

A questionnaire is also another research instrument that was used in this study to collect data. A questionnaire is a data collection instrument, whereby the respondents respond to questions by writing down their responses (Gupta, A., & Gupta, N. 2022). In this study questionnaire comprised of structured questions that addressed the three research questions and were intended to bring out ideas and details from the respondents. The questionnaires were distributed to 20 small scale fashion entrepreneurs 10 stake holders (parents). Questionnaires allowed respondents to be anonymous and this resulted in more truthful responses. The researcher opted to use questionnaires to collect data because of their time saving nature. The respondents answered the questionnaires while the researcher was conducting other research business. The major drawback of using questionnaires was that of response rate. The respondents usually fail to complete the questionnaire due to lack of understanding, especially if the questions prove to be difficult to them. Some of the fashion entrepreneurs' had challenges in comprehending the questionnaires due to low literacy rate. Some of them joined the fashion industry as general hands and later got the on job training which was done verbally. Some fashion entrepreneurs lacked reading techniques which led to low response rate on questionnaires.

The structure of the questionnaire in this research project was kept simple, clear and straight to the point, which encouraged full involvement of the selected respondents. The questionnaire consisted of mainly closed ended questions where the researcher had provided responses for the small scale fashion entrepreneurs to select the responses and a few open ended questions which allowed respondents to give their own views and opinions.

3.7.3 Observation

Observations were also used in this study, to observe the quality of school uniforms being produced by fashion entrepreneurs. Adler, (2022) defines observation is an act of noting and recording some event, the researcher selected three uniforms from each fashion entrepreneur. The researcher carefully observed the type of fabric used, the construction processes, the crotch lines, yokes, how the sleeves were inserted, the collars, whether the school uniform parts were proportional, the ease allowances, the overlapping hems allowances, the sewing process and the quality of the materials used by fashion entrepreneurs. The researcher made use of an observation checklist to understand the quality of the school uniform, the materials used, the

fitting and the sewing processes that the small scale fashion entrepreneurs were using. Observations of school uniforms were carried out at 8 primary schools and 4 secondary schools. The researcher also observed the methods of constructing patterns and the cutting of pattern pieces that were used by the fashion entrepreneurs who were into school uniform manufacturing business. The researcher took photographs of school uniforms with fitting challenges and also the pattern making methods that the fashion entrepreneurs employed in order to produce a school uniform.

3.8 Administering the research tools.

The research tools, (questionnaire and interview guide) were administered to twenty five (25) small scale fashion entrepreneurs who are into school uniforms manufacturing business and fifteen (15) stakeholders (parents). The questionnaires were distributed physically and also the interviews were carried out face to face. The Researcher physically analyzed the quality of 60 school uniforms that were produced by the small scale fashion entrepreneurs. Therefore the administering of the research tools requires physical contact with the respondents.

3.9 Pre-testing of the research tools

The questionnaire and the interview guide were pre-tested with a smaller number of small scale fashion entrepreneurs who were into school uniforms manufacturing business but were not part of the population sample. Pre-testing of the questions on the questionnaire and the interview guide for imperfections and the time required to finish responding. The questionnaire and the interview guides were pre-tested to check for structuring problems as this may lead to loss of valid information. The pre-testing of the research instruments resulted in the improvements to the questionnaire and the interview guide.

3.10 Data analysis and presentation

The collected data was summarized and analyzed using both quantitative and qualitative methods of data collection. The data analysis was conducted and guided by the research objectives and research questions of the study. Descriptive statistics was used to analyze quantitative data in form of frequencies and percentages. The qualitative data obtained from the fashion entrepreneurs during the interview sessions was analyzed in common themes to bring out similarities and variances. The data obtained from the quantitative data was presented in forms of

tables and charts. The qualitative was presented in descriptions and reports to complement and support the qualitative data.

3.11 Chapter Summary

In this chapter the researcher discussed the research approach, research design, target population, sampling and sampling procedures, research instruments, pre-testing and administering of research tools, data analysis and procedures. In the next chapter the researcher analyzed the collected data and present it through tables, pie charts and pictures collected during observations.

CHAPTER 4: DATA PRESENTATION, ANALYSIS AND DISCUSSIONS

4.1 Introduction

This chapter presents the research findings and data analysis using mixed methods approach where both qualitative and quantitative data collection tools were employed. Data was presented in the table form augmented with narrations. The purpose of this study was to analyze the quality of school uniforms being produced by fashion entrepreneurs. Data was collected using the following research objectives;

- Examine the quality of school uniforms made by small scale fashion entrepreneurs.
- Establish challenges faced by small scale fashion entrepreneurs in producing quality school uniforms
- Develop strategies that can mitigate challenges faced by small scale fashion entrepreneurs in producing quality school uniforms

4.2: Questionnaire return rate from fashion entrepreneurs.

Table 4.1 outlines the questionnaire distribution and return rate of respondents

Table 4. 1: Questionnaire distribution and return rate of respondents

Respondents	Number of questionnaires distributed		Number of questionnaires returned	
	Frequency	Percentage	Frequency	percentage
Fashion entrepreneurs	25	100%	20	80%
Stakeholders (parents)	15	100%	10	67%
Total	40	100%	30	75%

Results presented in table 4. 1 indicates a total 30 questionnaires were responded to, (20 for small scale fashion entrepreneurs and 10 for stakeholders) for data analysis.

A total of 20 appointments to fashion entrepreneurs were made and agreed to undergo interviews with the researcher. The researcher also carried out observations on 60 school uniforms whereby the researcher was observing the quality of the school uniform being made by fashion entrepreneurs. The observations included the fitting of the school uniform, the fitting challenges that the learners were encountering when they were in school uniform, the quality of the fabric used and also the sewing techniques used to come up with the school uniform.

4.2.1 Demographic characteristics of fashion entrepreneurs and stake holders (parents)

The first objective of the study was to determine the demographic characteristics of fashion entrepreneurs, learners and stakeholders (parents) within Mashonaland west in terms of their gender, age, level of education years of experience. This section presented the descriptive analysis of these characteristics

Table 4.2: Demographic data for fashion entrepreneurs

Variable	Response	Percentage
(a) Gender		
Male	14	70%
Female	6	30%
(b) Age range		
18-30	3	15%
31-40	6	30%
40-45	8	40%
46 & above	3	15%
(c) Educational qualifications		
Grade 7	1	5%
Zimbabwe junior certificate (ZJC)	3	15%
Ordinary level (O' Level)	14	70%
Advanced level (A' Level)	2	10%
(d) Professional qualifications		
None	7	35%
National Foundation Certificate (NFC)	10	50%
National Certificate (NC)	2	10%
National Diploma (ND)	1	5%
Higher National Diploma (HND)	0	0%
(e) Experience		
0-2	6	30%
3-5	9	45%

6-7	3	15%
8-10 & above	2	10%

The results presented in table 2 shows that males dominated in fashion entrepreneurship. Males (N=14; 70%) while females constitute (N= 6; 30%). Gender distribution helped us to be gender sensitive and it created information that was balanced from both sexes. Therefore we can rely on the information gathered from both sexes.

Analysis of age distribution of fashion entrepreneurs was presented in table 2 above. Table 2 represents the age distribution for fashion entrepreneurs. Age range 41-45 had the highest number of fashion entrepreneurs which dominated 40%. This was an indication that amongst the fashion entrepreneurs most of them were mature. Age range 31-40 had 30% dominance amongst the small scale fashion entrepreneurs. 46 years and above and 18-30 years had both 15% dominance. Age was very important when collecting data it clearly showed the differences in life experience between age groups as well as people changing in experience. The characteristics of age groups with people born around the same time with a particular generation share some typical characteristics and ways of thinking.

Table 4.2 (c) presented the educational qualifications of fashion entrepreneurs. Those who attained grade seven as their highest educational qualification constituted 5% of the fashion entrepreneurs, which means they can read and write. 15% attained Zimbabwe junior certificate, this group of fashion entrepreneurs could read, write and were able to follow some instructions. The large percentages of fashion entrepreneurs were those who attained Ordinary level, they constituted 70% of the fashion entrepreneurs. This group of entrepreneurs could read, write and were able to follow pattern making instructions that is if they had the background of textile technology and design attained in the new curriculum which now incorporates basic pattern making in its syllabus. 10% managed to attain the advanced level certificate. This group can easily follow an instruction that is if they had background in textile technology and design at advanced level.

Table 4.2 (d) presented the professional qualifications of fashion entrepreneurs. From the research findings it showed that 35% had no professional qualification in clothing and fashion

designing. This meant that this percentage may have attained the knowledge through on job trainings, where they received the skills. This was supported by Brenton and Hoppe (2007) who points out that the textile and clothing industry absorbs a large number of unskilled labor. Most of these receive an on job training which in return limit them to explore in different areas of specialty within the textile industry. 50% attained a national foundation certificate in clothing and fashion design. This group of entrepreneurs has basic skills which are taught at national foundation certificate level. From the information gathered from the interviews it shows that the respondents did not undergo industrial attachment so as to enhance their knowledge and they had to have an on hands experience in the clothing industry. 10% of the respondents were holders of the national certificate in clothing and fashion designing. This group of respondents has the basics in in clothing and fashion design which were more improved that those attained from the national foundation certificate. From the information gathered the holders of the national foundation certificate did not have an industrial attachment as part of their training, it therefore meant that they did not have the opportunity to explore different departments in fashion industry and they did not have hands on experience in the fashion industry. 5% of the respondents were holders of the national diploma in clothing and fashion design. This group of respondents has advanced knowledge in clothing and fashion design and underwent industrial attachment so as to enhance their knowledge and hands on industrial experience. Amongst the respondents none of them attained a higher national diploma in clothing and fashion design, the highest professional qualification amongst the entrepreneurs was national diploma in clothing and fashions design which only 5% dominance.

Table 4.2 (e) presents experience of entrepreneurs in manufacturing school uniforms. The results indicated that 30% of fashion entrepreneurs were still in their early years into fashion business with the work experience which ranged from 0-2 years. 45% had been in the uniform manufacturing business with the work experience ranging from 3-5 years. 15% had work experience which ranged from 6-7 years. Those who had work experience which ranged from 8-10 years and above constituted 10% of all the participants. Work experience plays a vital role in the production of quality goods. Experience helps small scale fashion entrepreneurs to improve and create new innovative ideas that boost customer's confidence and improves relations with clients.

Table 4. 3: Demographic data for stakeholders (parents of Learners)

Variable	Response	Percentage
(a) Age range		
18-25	1	10%
26-30	3	30%
31-40	4	40%
41-50	1	10%
51 & above	1	10%
total	10	100%
(b) Where they prefer to buy school uniforms?		
Reputable shops	6	60%
Fashion entrepreneurs	9	90%
(c) What do stakeholders consider when buying school uniforms?		
Price	9	90%
Quality	5	50%
Both quality & price	4	40%

Table 4. 3 (a) Represents the age range for parents and where they preferred to buy school uniforms for their children. Data collected showed that 40% of the parents who responded were between the age range of 18-30 and 60% were from the age range 31-50 and above. This showed that 60% of the parents were the ones with most children who were in school. It was the researcher's assumption that the 40% may have one or two children in school.

Table 4. 3(b) represents the findings of where they prefer to buy their children's school uniforms, 90% preferred to buy school uniforms from the fashion entrepreneurs and 60% preferred to buy from the reputable shops. This was supported by (Nyoni, 2017) who points out that the retail shops have very expensive fashion products, the consumers opt to buy cheap clothes and second hand clothing. Due to economic hardships that the country is currently experiencing most of the parents cannot afford to purchase uniforms from reputable shops. With the high unemployment rate in the country parents now preferred to buy from fashion entrepreneurs where they have the opportunity to negotiate for prices as compared with reputable shops where there is no

negotiation on prices. Parents' no longer consider quality due to higher inflation in the country. This is in line with Nyoni (2017) findings who points out that the emergency of fashion entrepreneurship has captured a large clientele base among the consumers due to economic hardships the country is currently experiencing. As such consumers cannot afford apparel from retail shops.

Table 4.3(c) presents what stakeholders' considered when purchasing school uniforms. 90% of the respondents who are the fashion consumers indicated that when purchasing school uniforms for their children they considered price. The fashion consumers admitted that their income has been eroded by high inflation and the prices being charged by retail shops is way beyond their reach. Their only worry was that their children have a school uniform. Most parents were struggling to make ends meet so they would grab anything that comes their way which was cheaper and which they could afford. Poverty has affected so many families and they have failed to make ends meet.

50% of the respondents indicated that they considered the quality when they are buying school uniforms for their children. They indicated that they were mostly worried about the appearance of their children when they are amongst other children. Clothing itself is a silent language; people could easily misjudge the background of the learner due to the fitting and the quality of the school uniform. 40% of the fashion consumers considered both quality and price. They cited that they considered value of their money, which means they considered the quality of the fabric used, the sewing process engaged to manufacture the school uniform and the fitting of the school uniform on their children. The choice of quality garments was supported by (Conti, Vesci, Crudele & Pencarelli 2019) who pointed out that dimensions of quality of a finished garment consist of performance, aesthetics, serviceability, durability, conformance, reliability and performance. A good quality school uniform should exhibit good appearance, ease of movement, comfort and should balance with the learners figure, that is why 20% of the fashion consumers considered both quality and price.

4.3 Quality of school uniforms made by small scale fashion entrepreneurs in Zimbabwe.

This research question sought to find out the quality of school uniforms produced by small scale fashion entrepreneurs. Data was collected using interviews and observations. To analyze the quality of the school uniforms, a total of 60 uniforms were collected from the small scale manufacturers and observed if the garment processes were correctly done. The findings are presented into two major themes in the table below.

Table 4.4: Quality of school uniforms from small scale fashion entrepreneurs.

Theme	Response					
	Dress(n=20)		Shirt(n=20)		Short(n=20)	
4.3.1.1 Garment processes and parts on the school uniform correctly designed and constructed	Yes	No	Yes	No	Yes	No
Choice of material	13	7	16	4	16	4
Panels or parts of the school uniform proportional and balanced	6	14	8	12	4	16
Neckline shaping and collars	4	16	4	16	-	-
Armhole shaping and sleeve insertion	6	14	3	17	-	-
Crotch lines shaping	-	-	-	-	8	12
Stitchery of the garment	5	15	7	13	7	13
Fitness of the school uniforms						
Fits well	6	14	8	12	5	15
Uniforms too tight	5	15	8	12	7	13
Uniforms too loose	9	11	4	16	8	12

(Field data; October 2022)

4.3.1 Garment processes and parts on the school uniform correctly designed and constructed

4.3.2 Choice of material

The results showed that most of the uniforms were made using suitable fabric material that ranged from polycotton, harttele and drill. Some of the small scale manufacturers used polyester mandy. Although polyester mandy was found to be hard wearing, the pupils indicated that the

uniforms are too warmer to such an extent that they face challenges when wanting to play hard games. One of the pupils had this to say ‘I have got this type of uniform but when I go to play wearing this uniform I tend to sweat more’. This reveals that the pupils sometimes feel uncomfortable in the uniforms made from polyester mandy fabric as it is warmer to the skin.

4.3.3 Panels or parts of the school uniform proportional and balanced

Most of the uniforms that were analyzed indicated that the parts of the school uniforms are not proportional as reflected in Table 4 above. It was observed that 14 dresses, 12 shirts and 16 shorts had section parts which were either too small or too big for the size of the school uniform. The researcher observed that some of the yokes and panels were too small and not well shaped as indicated by the figure 2 below. This might be caused by poor pattern making and cutting of the garment design before it is constructed.



Figure 2: Unproportioned panels and distorted yoke shape.

Figure 2: Unproportioned panels and distorted yoke shape I (Field data; October 2022).

4.3.4 Neckline shaping and collars

The researchers observed that most the uniforms examined had poorly shaped neckline finishes (16 dress uniforms and 15 shirts). Some of the collars were too big for the uniform size as shown in figure 3 below. The findings show that the guardians who are the major clients of the small scale manufacturers are also facing challenges on the quality of the school uniforms being produced by the fashion entrepreneurs as commented ‘We just end up buying these ugly uniforms because we do not have enough money to go to good shops, the once at these shops are

very expensive’. This aspect reveals that guardians wish to buy uniforms from reputable retail outlet but could not afford. Therefore they end up resorting to buying from the small scale manufacturers. What these guardians consider is just for the pupil to be in the same color with the rest of other pupils without thinking of the message the poorly made uniform carry when worn.



Figure 3: Collar too big for the size of the uniform.

Figure 3: Collar too big for the size of the uniform (Field data; October, 2022).

4.3.5 Armhole shaping and sleeve insertion

The results showed that 14 dress uniforms and 17 shirts had armhole shaping and sleeve insertions that were not proportionally shaped and correctly inserted. Some of the shirts were showing shoulder measurements that were too wide such that they extend into the armhole and the sleeve inserted just below the armpits as shown by Figure 4 below. This might have been caused by cutting directly on the fabric using estimated measurements for the size of the uniform or use of poor patterns by the manufacturer. Uniforms with poorly made patterns or without

patterns produce unproportioned products that have fitting challenges to the learners.



Figure 4: Poorly shaped armhole and shoulder measurement.

Figure 4: Poorly shaped armhole and shoulder measurement (Field data; October 2022).

4.3.6 Crotch lines shaping

The results showed that 8 school uniforms short had well shaped crotch lines whilst 12 were poorly shaped. As observed in Figure 5 below, one of the school uniforms short had a pulling and bulging effect when worn by one of the selected pupils. This shows that the school uniform short pattern used did not have correct measurements. The fabric allowances given from waist to hip were too wide and could not suit the wearer's actual measurements. A lot of fullness was reduced at the waistline and given on the hipline which resulted in the bulging of the short around the pelvic area. Not enough allowance and easing was given at the crotch which results in the pulling effect around the crotch thereby giving discomfort to the wearer. Such result might reveal that the manufacturer has limited knowledge and skill on how to take measurements for the body rise which is used for shaping the crotch. The quality of school uniforms highly contribute to the learners' performance. Once the learner discovers that the quality of his or her school uniform is poor this will in turn affects the learners' self-esteem and will lose confidence when they are amongst other learners who have quality school uniforms.



Figure 5: School short with poorly shaped crotch line.

Fig 5: School short with poorly shaped crotch line (Field data; October 2022).

Fitness of the school uniforms

4.3.7 Uniforms that were too tight

The researcher found that 6 dresses, 8 shirts and 5 short had perfect fit whilst the rest where either too tight or tool loose. Among the uniforms sampled, most of them (15 dresses, 12 shirts, and 13 shorts) were too tight fitting which restrict the learners' movement. These uniforms showed that not enough easing allowance was given during the cutting stage. Some of the uniforms showed that they might get torn when the pupils run around playing or doing some activities as they were too tight at the armholes and crotch lines as shown by one of the sampled uniform Figure 5 below fitted by one of the learners.



Figure 6: School uniform which is too tight.

4.3.8 Uniforms that were too loose

It was observed that some of the school uniforms were too loose or big size for the pupils as shown in Figure 7 below. Although pupils grow faster to the extent of adding growth allowance, it came out from the pupils that their guardians buy them too big uniforms that pupils do not feel comfortable in them. One of the pupils had to say ‘I do not like this big uniform, I would look like an old granny’. This aspect reveals that pupils need to be comfortable and confident when they are wearing school uniforms. A poorly made and oversized uniform would make the pupil feel out of place and would look down upon him or herself and in turn may as well affect their learning.



Figure 7: Loose fitting school uniform

The findings on the garment processes and parts on the school uniform showed that they were not correctly designed and constructed. Finding by Choudry, Sikka and Bansal (2018) argue that clothing garment should not only cover the body but should be of good quality, pleasing to look at and comfortable to wear. Whilst it was observed that most of the school uniforms were made using correct material, it was the poor construction combinations that distorted the appearance of the uniforms from small scale fashion entrepreneurs. This points out that most of the school uniforms from the small scale fashion entrepreneurs would not meet the expected quality standards based on Aldrich (2014) as quality is about suitable material and construction combinations that guarantee functionality, safety and performance of the product (Piippo, Niinimäki & Aakko, 2022). As such most of the school uniforms from the small scale fashion entrepreneurs portrayed poor quality and may not compete with those sold from reputable retail outlets.

The findings revealed that the school uniforms made by small scale fashion entrepreneurs were either too tight or too loose. Garment fit is a very important factor when considering the quality of school uniforms. Ohaka, Illoje, Lemchi, and Funke (2018) found that good clothing fit is achieved with a garment that is at ease to the wearer, with adequate room for ease of movement, absence of avoidable creases and bunching of fabrics. With uniforms that are too tight, learners might not enjoy the school environment when their school uniforms do not fit them well. Ohaka, et al. (2018) point out that clothing with good fit send out positive messages about the

wearer and it attracts the viewers' appreciation and comment. School uniforms with fitting challenges appear to be unattractive and lack quality which may lead the learners with ill-fitting uniforms to isolate from other learners. Weber and Mitchel (2006) state that people use clothes to convey message about themselves through dress. When a school uniform lacks fit and is poorly constructed, it sends a negative signal and it draws attention to the wearer. School uniforms should be of good fit so that learners take pleasure in wearing the school uniform so that every learner looks the same and there is no class distinction amongst the learners.

4.4. Challenges encountered by small scale fashion entrepreneurs in producing quality school uniforms

This research question sought to find out the challenges encountered by small scale fashion entrepreneurs' in producing quality school Uniforms. Data was collected using questionnaires, interviews and observation. Data was presented in form of charts and narrations. The findings for this research question are presented below.

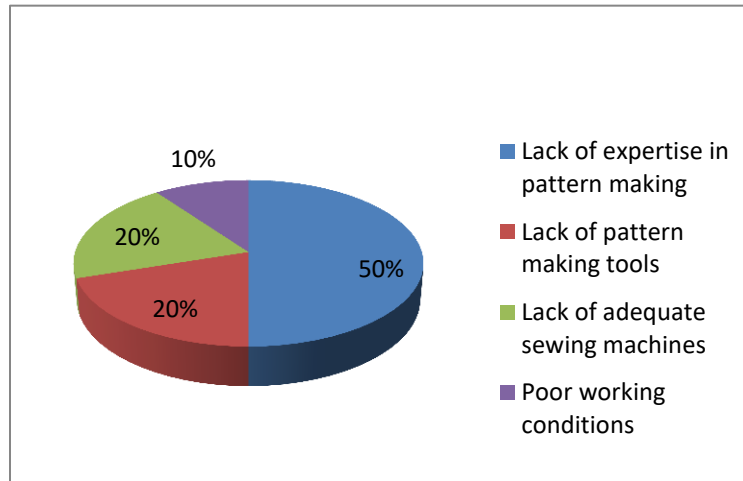


Figure 8: Challenges encountered by small scale uniform manufacturers.

4.4.1.1 Lack of adequate sewing machines

Respondents indicated that do not have adequate sewing machines and proper working space which are required in order to produce standard school uniform. It was observed that most of the

fashion entrepreneurs interviewed, it was observed that most of them had domestic straight sewing machines, a few had industrial straight sewing machines and domestic or heavy duty over lockers. There was no sign of other machines such as elasticators, flossing and buttonhole machines. Most of them preferred to use the machines that they could afford and indicated that they could not give jobs to those who have the machines as it comes with a fee. Lack of machinery such as over lockers, elasticators, bar tuck machines, buttonhole and flossing machines are among other machinery that is required in order to have products that has a professional finish.

4.4.1.2 Poor working conditions

Poor working conditions such as small spaces, poor lighting facilities and unavailability of electricity, were cited as some of the challenges experienced by small scale fashion entrepreneurs. They were, at times, forced to work overnight when electricity is available. It was observed that when electricity is available the fashion entrepreneurs will be under pressure to clear the back log and at times they do not care about the quality of the end product. Respondents indicated that they lacked spacious work space. It was observed that most of the fashion entrepreneurs occupy small spaces and had challenges in drafting patterns, laying and cutting out. Most of them were observed using the floor for cutting out. The cutting tables could not fit in as the workspaces thereby compromising the quality of the products they are manufacturing.

From the above result, small scale fashion entrepreneurs faced numerous challenges such as lack of expertise in pattern making, shortage of machinery and poor working condition. Similar findings have been revealed by Ozougwu & Elope (2022) in a study of clothing entrepreneurs in Nigeria. Various challenges posing threats to effective garment production were identified in the study. With such difficulties it might be very difficult for the small scale fashion entrepreneurs to produce well-fitting school uniforms.

4.4.1.3 Lack of pattern making equipment.

The findings showed that 20% of the respondents indicated that they lacked pattern making tools. Amongst the respondents they admitted that they had no access to pattern making equipment such as overlockers, heavy-duty straight machines, elasticators and buttonhole machine, due to their rural location, where shop owners do not have the equipment in stock.

Respondents indicated that they have no access to pattern making manual. The fashion entrepreneurs admitted that they were in a position to make their own patterns but their challenge was that of not having access to pattern making manuals. They indicated that they had the technical skills on how to draft patterns but their challenge was that the pattern making manuals are expensive and were beyond the reach of many. The fashion entrepreneurs that are equipped with knowledge and skills were not willing to share with those facing challenges in the fashion industry. This finding align with those of McKinney, Bye & Labat (2012) who observed that that individual pattern makers may mentally store their experience as sort of personal theoretical framework used in making future patterns, but rarely specific information is recorded or shared. This explains that fashion entrepreneurs with knowledge on how to draft patterns are not willing to impart their knowledge to other fashion entrepreneurs; they regard their knowledge as a trade secret which cannot be shared with their competitors in the fashion industry. Those willing to share their pattern drafting knowledge may not have the pedagogy to impart knowledge to others. Hamidah (2018) states that very few fashion entrepreneurs can develop themselves with the latest knowledge and skills if they are self-taught. Some of these respondents admitted that they only made patterns when they were venturing into the entrepreneurship business and never made any after they were established in the fashion business and could not make any pattern because they now lacked the manuals and the skill itself. Pattern drafting is a practical skill which needs constant practicing or else the skill slowly vanishes. Continuous practicing of pattern drafting will enable the fashion entrepreneur to be up to date with the latest fashion trends and changes.

4.4.1.4 Lack of expertise in pattern making

The respondents admitted that pattern making was a major blow in their uniform production business. They cited lack of experience and knowledge on how to make standard patterns. With lack of expertise in pattern making the entrepreneurs were failing to estimate the amount of fabric required, which then forced them to lay some pattern pieces off grain. For example the school short in figure 8 showed that entrepreneurs did not have the expertise in pattern making. This shows that the school short pattern used did not have correct measurements as the allowances given from waist to hip were too much and could not suit the wearer's actual measurements. A lot of fullness was reduced on the waistline and given on the hipline which

resulted in the bulging of the short around the pelvic area. Inadequate allowance was given at the crotch which resulted in the pulling effect around the crotch thereby giving discomfort to the wearer. With this result the researcher had to examine the methods they use for pattern making as presented and analyzed below.

4.4.2.1 Methods used by fashion entrepreneurs to make patterns

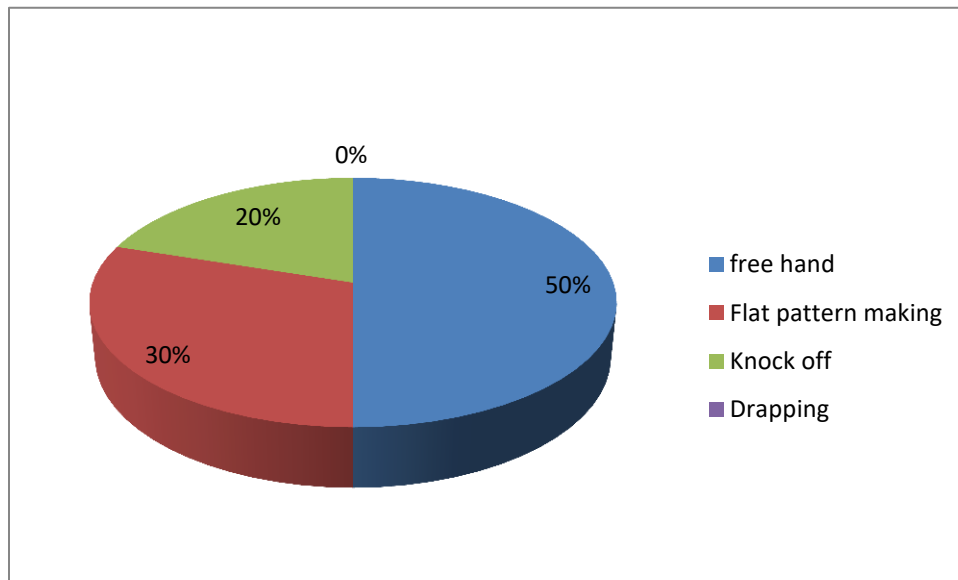


Figure 9: Methods used by small scale fashion entrepreneurs to make patterns.

4.4.2.2 Free hand garment cutting

Research findings revealed that 50% of the fashion entrepreneurs used freehand to cut out garments whereby they drew the product shape onto the material and cut out the garment without patterns. . The majority of the fashion entrepreneurs used this method to cut out school uniforms straight on the fabric. There is no reference point in using this method. Once the cutter is not well and absent from work due to other reasons, the cutting operation stops. Bakker-Edor (2018) asserts that freehand product cutting is an act of drafting out designs and styles straight on the fabric and cutting them out in which the product design and style details are within the designers mind set limiting access by other workers within the organization. The fashion entrepreneurs said they were more comfortable with freehand product cutting than the use of patterns. They reasoned that freehand product cutting was easier to deal with since it was fast and did not need

additional materials such as pattern making paper, pencils and extra working space. The fashion entrepreneurs considered freehand as a faster method for garment cutting. They cited that they had a lot of work and did not have time to draft patterns. This was in line with study findings by Foster and Ampong (2012) cited by Bakker-Edor (2018) who argue that pattern drafting still remains a challenge in the informal sector, because it is believed that freehand cutting instructions were usually few and easy to memorize. Therefore, this might be the reason why the majority of the fashion entrepreneurs were more comfortable in cutting out garments using freehand. The observations by the researcher also confirmed that the majority of the fashion entrepreneurs drafted designs and styles directly on the fabric. They revealed that it was a faster way of making patterns directly on the fabric and it takes less time to construct the garments thereby leaving more time to serve other fashion consumers. However, the freehand may result in fabric wastage since it leaves no room for alterations and this may lead to the production of garments with fitting challenges. The pictures below reflect the freehand product cutting process by some of the entrepreneurs.



Figure 2: Freehand product cutting used by small scale fashion entrepreneurs

4.4.2.3 Flat pattern making

Research findings reveal that 30% of the fashion entrepreneurs used flat pattern making when constructing patterns for school uniforms. When interviewed these fashion entrepreneurs pointed

out that they were more into pattern drafting as compared to other methods of pattern construction. They were more comfortable with this method as they were in a position to identify faults before the final garment was made. Bakker- Eddoh (2018) reasoned out that pattern drafting helps to identify certain faults that might arise on the design and seek to adopt remedies to the problem before construction. The fashion entrepreneurs indicated that they used actual body measurements and standardized ease allowances when constructing patterns to ensure that the end product had a perfect fit. Aldrich (2014) points out that flat-pattern drafting is based on commercialized basic patterns with standard measurements, that when employed in designing, one makes use of fitting darts to improve apparel fitting. Semptress (2010) indicates that flat-pattern drafting involves using a sheet of paper, pencil and many pattern drafting tools to come up with pattern based on body measurements. The fashion entrepreneurs also indicated that once they made the product basic pattern they would manipulate these in future by adding new design details to meet consumer needs. Anikweze (2012) posits that flat pattern making has several advantages which include the ability to achieve design patterns to fit into cost-effective layouts, the possibility of restructuring old patterns into new ones to meet trendy designs, the ability to grade the patterns into various product sizes to cater for consumer body sizes and have room for pattern adjustment to cater for consumer body irregularities.

4.4.2.4 Knock off (dismantling old clothes)

The finding revealed that 20% of the fashion entrepreneurs indicated that they used old clothes which they dismantled and traced out patterns from the pieces. When interviewed the entrepreneurs indicated that they had the knowledge on how to join pieces to come up with a uniform since they got on job training as machinist from their previous employers. They lacked technical knowledge and skills in the construction of patterns for use in manufacturing of school uniforms. Their ability to dismantle the old clothes showed that the sampled entrepreneurs were aware that they would produce proportioned products by using some form of pattern templates. However it has been observed that this group of fashion entrepreneurs was prone to make mistakes when giving allowances and grading the pattern pieces to the next size. Thus when the learners end up with school uniforms that have fitting challenges such as having a small shoulder allowance whereby the sleeves ended up compensating these allowances

4.4.2.5 Draping.

None of the fashion entrepreneurs used draping to come up with patterns. The interviewed entrepreneurs revealed that they were not familiar with that particular method. They revealed that the dress foams or mannequins which were required when one wants to employ the draping method were too expensive and were beyond the reach of many small sale fashion entrepreneurs. Naznin (2018) describes draping as a method that involved a detailed survey and study of the figure to build up a reliable fitting experience. Draping involves the rapping a two dimensional piece of fabric around the dress form, conforming to its shape to create a three dimensional fabric pattern. Ease allowances for movement of the body are also added to make the garment comfortable to wear (Naznin, 2018). This method is an artistic approach in which the fashion entrepreneurs need to creatively fit a piece of material around the body or mannequin so that the folds on the fabric produce a variety of styles according to the curves of the body. Such style features include darts, pleats, tucks and gathers. Obinnim and Afipongo (2015) elaborate that draping method to produces patterns which conforming to a silhouette, ensure a desired style and fit of the garment with, ease allowances for movement of the body to make the garment comfortable to wear.

It came out from the results above that small scale fashion entrepreneurs faced the major challenge of pattern making which is required to cut school uniform garments. Similar findings have been revealed by Ozougwu & Elope (2022) in a study of clothing entrepreneurs in Nigeria revealing threats to effective pattern making such as difficulty in style modification, following pattern drafting guidelines and lack of tools for pattern making. With such difficulties it might be very difficult for the small scale fashion entrepreneurs to draft garment patterns that are effective for constructing well-fitting school uniforms. Pattern making plays a vital role as patterns are the foundation of garment construction. Uniforms with poorly made patterns or without patterns produce unproportioned products that have fitting challenges to the learners. Naznin, Tabraz and Sultana (2017) point out those patterns are used to determine the amount of fabric required for each particular design and size, thereby lessening the possibilities of having more or less fabric. This point out that small scale fashion entrepreneurs have to use correct standard body measurements and to use appropriate skills for constructing block patterns for the school uniforms.

4.5 Strategies to improve the production of quality school uniforms

This research question sought to develop strategies to improve the production of quality school uniforms. Data was collected using interview and questionnaires. The results are presented in form of tables and narration.

Table 5: Possible strategies to curb challenges encountered by small scale fashion entrepreneurs.

Strategy	Fashion entrepreneurs(N=20)		Stakeholders(N=10)	
	Responses	%	Responses	%
Development and access to digital patterns	15	75%	7	70%
Pattern making manual	8	40%	4	40%
Avail hard copy patterns	12	60%	8	80%
refresher courses	6	30%	6	60%
Government to provide business capital	13	65%	5	50%
Subcontracting processes	8	40%	4	40%
Provide subsidized rental for working space	16	80%	6	60%

4.5.1.1 Development and Access to digital patterns

Seventy-five percent of the fashion entrepreneur's respondents' indicated that in order to curb the challenges being encountered in making patterns, they should have access to digital patterns. The respondents cited that if they are to have access to digital patterns that would be of great value and they would have an assurance of producing high quality products as the digital patterns are standardized. Access to digital patterns would reduce the product production time. The fashion entrepreneurs noted that most of their time was being consumed with pattern drafting,

grading and trying to make alterations on the drafted patterns. Therefore, the respondents strongly agreed to the initiative of having online standardized patterns for school uniforms. They agreed that the move of having ready to use pattern would be of great help and would ease pressure of drafting patterns and would curb the mistakes that come with lack of expertise in pattern making. The respondents also indicated that they would safely store their patterns on soft copies and can only print them when need arise. The stakeholders saw this as a positive move towards the production of school uniforms that are standard and which could compete with uniforms that were being produced by reputable companies which were into uniforms production. The respondents agreed that those struggling with making patterns would benefit much from the ready-made patterns although these would be accessed at a cost. Availability of digital patterns on the market may lead to improved quality of products from the small scale entrepreneurs if coupled with good garment construction techniques. A few of the small scale fashion entrepreneurs were not in agreement with the production of online standardized patterns for school uniforms. They reasoned that they had no access to computers and that the process would add a production cost to the product resulting in higher selling prices which would chase away their clients. They indicated that they would rather continue to use the traditional methods as they do not come with costs, thereby saving their hard earned money. However the additional patterns cost is just a point cost since one needs to purchase the patterns once and produce several quantities which may quickly shed off the cost

Digital patterns are an alternative since the patterns are produced in various sizes with fit guarantee. Naznim et al. (2017) explain out that CAD allows engineers to plan model and evaluate a product before it is manufactured. The software makes it more efficient to produce accurate clothing patterns. Once the fashion entrepreneurs have access to digital patterns which are accurate, there is no room for the production of ill-fitting school uniforms since the digital patterns are standardized. The respondents noted that access to digital patterns would help them to keep their patterns as they can be saved and stored as compared to drafted patterns which have no back up, have high risk of being torn and losing some pattern pieces. Access to digital patterns also would lessen pressure on the small scale fashion entrepreneur as they can easily be accessed. The stakeholders also cited that the long term solution to curb the challenges that the fashion entrepreneurs were facing was for them to have easy access to digital patterns.

4.5.1.2 Pattern making manuals

Forty percent of the fashion entrepreneurs indicated that in order to curb the challenges in pattern making, a pattern making manual with pattern making instructions for school uniforms be availed to them at affordable prices. The fashion entrepreneurs cited that if a pattern making manual was availed it would be of great value to them, since they would have guidelines from the manual and they would as well use it as a reference book whenever they have challenges. The stakeholders indicated that small scale fashion entrepreneurs should have access to a pattern making manual which is in simple language that could be understood by those with low literacy. This would help to curb the pattern making challenges to those fashion entrepreneurs who will be willing to take their time drafting patterns for school uniforms following the instruction from the pattern making manual. This reflects that the fashion industry should cater for individual abilities in the drafting of garment construction manuals. This calls for further studies in the pattern making field on production of garment making manuals in simple language accessible to the consumer.

4.5.1.3 Avail commercially ready to buy patterns

Sixty percent of the fashion entrepreneur indicated that if hard copy patterns are availed in shops the pattern making challenges would be solved. They cited that there were no commercial patterns being sold in the shops. If one is to come across a hard copy pattern mostly its out dated. The availability of ready to use patterns would be of great value since they are user friendly and ensure quality products as ready-made patterns are standardized to fit the consumers. Hard copy patterns would lessen the hustle of making patterns thereby saving time for other business processes. The parents were also in support of the idea of having hard copy patterns availed in shops as a lasting solution to the challenges the small scale fashion entrepreneurs are facing in making patterns. The stakeholders indicated that hard copy patterns should be availed in shops so that the fashion entrepreneurs would purchase them over the counter. This would make life easier for those who have no expertise in pattern making, as they would buy graded patterns in shops and this would also save time to attend to other things in the fashion business. If commercially ready to buy patterns are availed, the small scale fashion entrepreneurs would produce garments with good fit. Good fit of garments is achieved when correct body measurements and appropriate skills used in the construction of patterns, (Armstrong et al.,

2016). Apparel made from commercial patterns exhibit good appearance ease of movement, comfort and balance. Availing of commercially ready to use patterns would help the small scale fashion entrepreneurs to produce high quality garments which may compete with other retailers. The production of quality uniforms would help the small scale fashion entrepreneurs to increase their customer base and productivity.

4.5.1.4 Refresher courses in pattern making

Thirty percent of the small scale fashion entrepreneurs indicated that it was ideal to have refresher courses in pattern making as this would enhance their pattern making skills. The respondents cited that they have the pattern making back ground, but due to lack of practice the skill of making patterns is gradually getting out of their heads. They suggested that if they were to have refresher courses in pattern making it would of great value to them. Some had suggested that since they only acquired the knowledge of making school uniforms as an on job training, it would be an opportunity for them to rectify the mistakes they were making when making patterns and they would have a better understanding of technical terms that are used in pattern making. Having pattern making lessens would give them an opportunity to attain a professional qualification they would use for their life experiences. Sixty percent of the stakeholders indicated that fashion entrepreneurs needed to have some lessons in pattern making so as to keep abreast with the current technological changes that are taking place in the fashion industry. Such lessons would expose them to recent software used in pattern grading, marker making and simpler garment construction processes like fusing garment sections using fusing technologies.

4.5.1.5 Government to provide business capital

The small scale and stakeholders revealed that in order to improve the small scale entrepreneurs' resources and working conditions they required access to Government loans. The loans would help the small scale entrepreneurs to acquire appropriate machinery for their businesses. Most of them revealed that lack of funding affected their operations as the appropriate machinery to carry out all operations is beyond the reach of many. Provision of government loans as business capital would boost their business and improve productivity. Getting loans from the government by small scale entrepreneurs would be a great advantage, as loan the interest of loan repayments is very low and can be afforded, as compared to interest rates offered by commercial lending

facilities. Appropriate machinery will enhance the quality of their products and this may mean that every small scale fashion entrepreneur would produce standard school uniforms that can compete with established school uniform producers.

4.5.1.6 Subcontracting processes.

Forty percent of the small scale fashion entrepreneurs revealed that subcontracting of processes was a good alternative for them in order to curb the challenges they were facing. The majority of the fashion entrepreneurs cited that subcontracting comes with a cost and it becomes too expensive on their part. If small scale fashion entrepreneurs are to subcontract process it would enhance the quality of their products as they would subcontract someone with expertise in a particular area with appropriate machinery. Difficult processes can be subcontracted to those with expertise so that quality products can be produced.

4.5.1.7 Provide subsidized rental working space

The majority of the small scale fashion entrepreneurs revealed that rentals for a space to operate on were too expensive. The property owners required their rentals in foreign currency which cannot be accessed in banks but on the black market. High rentals has forced many small scale fashion entrepreneurs to opt for small working spaces they can afford thereby compromising the laying and cutting out of garments which requires a spacious place where big cutting tables can be accommodated. Provision of subsidized rental work space by Local Authorities would assist the small scale fashion entrepreneurs with low cost but spacious renting place. The provision would cut operation costs and they would have all their equipment in one place.

Table 4.6: The most effective solution to problems faced by small scale fashion entrepreneurs.

strategy	Fashion entrepreneurs		Stakeholders	
	frequency	percentage	frequency	percentage
Provision of ready-made patterns	16	80%	7	70%
Capacity building	12	60%	5	50%

4.5.2.2 Provision of ready-made patterns.

The small scale fashion entrepreneurs and stake holders revealed that the most effective solution to the problems they were facing were to access ready-made patterns. Provision of ready-made patterns for school uniforms would ease the burden of making patterns or using the methods such as free hand garment cutting which results in the production of school uniforms with fitting challenges. It saves time if the small scale fashion entrepreneurs access ready to use patterns. Making patterns from scratch could be time consuming especially when one lacks the technical skill of pattern making. Enhanced quality of products could be achieved if the small scale fashion entrepreneurs access ready-made patterns from professionals. Small scale fashion entrepreneurs could save lots of money when they access ready-made patterns as they are cost effective. One pattern can be used to produce large amounts of garments thereby making a high turnover while producing high quality school uniforms.

4.5.2.3 Capacity building

The small scale fashion entrepreneurs and stake holders also revealed that capacity building was a lasting solution to their challenges. Their technical skills would improve the quality of school uniforms if they are capacitated. Through the learning process the entrepreneur's capability to produce quality school uniforms and to enhance their productivity. Capacity building of small scale fashion entrepreneurs would help them to implement the skills acquired so as to improve their professional and technical career and be able to meet and satisfy their client's requirements. A capacitated entrepreneur will gain knowledge in choosing suitable fabrics, using correct machinery and the correct garment construction processes.

4.5.3.1 Major strategy of designing digital patterns for school uniforms.

Based on the major solution proposed by the participants from the results in table 6 above the researcher had to design and develop basic digital patterns for school blazer, trousers, dress and shirt. The researcher had to research and found lectra software for digitalizing patterns for school uniforms and adobe illustrator software for illustrating designs for school uniforms. The researcher accessed the pattern making software from one of the clothing manufacturing industries in Zimbabwe (Bravette).



Figure 3: The classic school blazer

The classic school blazer design was sketched using the adobe illustrator. The classic school blazer has a two piece sleeve and the front view consist of two lower patch pockets and one breast patch pocket which is sewn on the left side. Style lines such as princess lines are also included as style features, the blazer has three buttons on the front. The blazer also has a revers collar. The back consist of the princess lines and the center back seam. The sleeves have one button each. The blazer is lined so as to give shape to the garment. The patterns for the blazer were drafted following the design features and presented below in figure 12.



Figure 4: Manually made classic blazer patterns.

A blazer block was drafted and the style details were introduced traced so as to come up with working pattern. Seam allowances were added to the final patterns which were then digitalized using software. Below is the digitalized blazer pattern. The lining pattern pieces were also manually made and were digitized using the same software into a marker for economic and efficient laying and cutting out as presented below in figure 13.

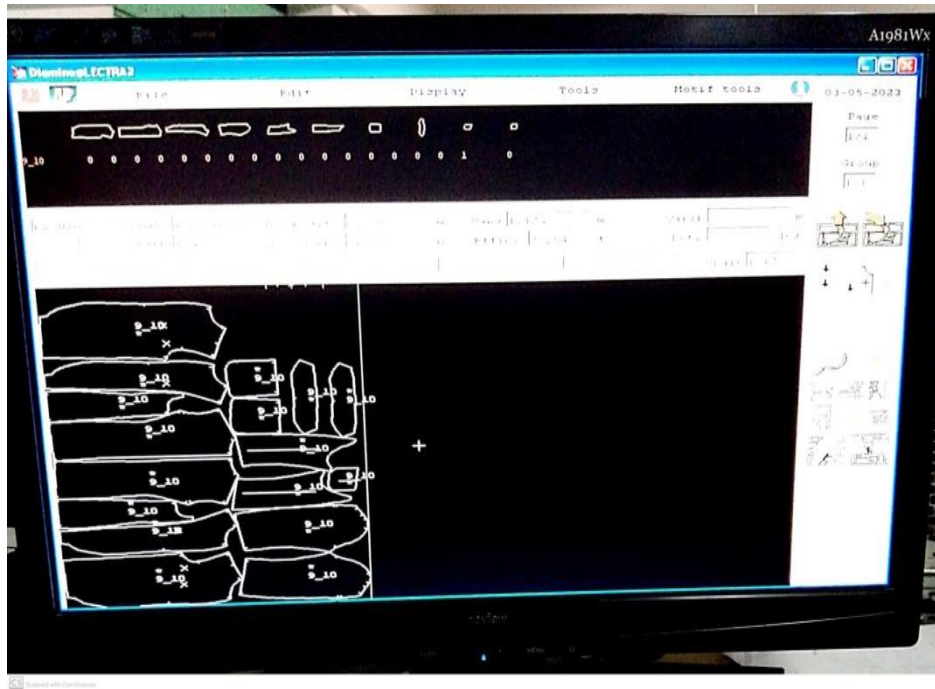


Figure 5: Digitalized blazer patterns.

The researcher firstly developed the pattern for the blazer manually. The pattern pieces were then digitalized using Lectra software. The manually made patterns were placed on a digitalizing table, using the digitalizing mouse. The pattern outline was then scanned into the software, all the necessary style features were then scanned in. The pattern pieces were laid out economically on a marker pattern which is then used to cut out the blazer.

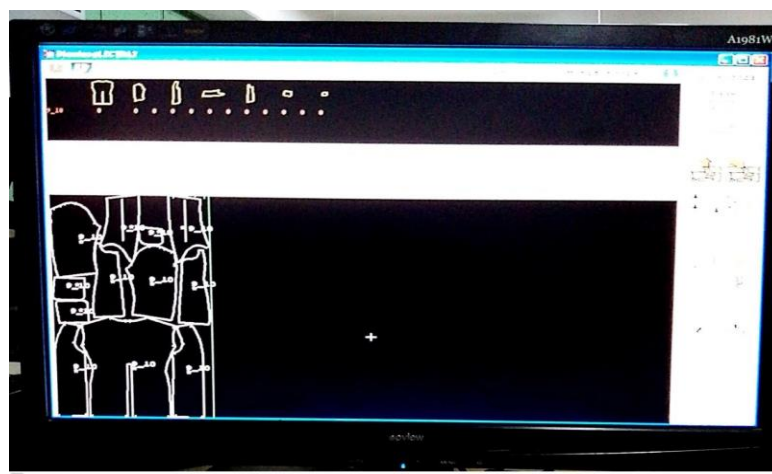


Figure 6: Digitalized lining patterns for the classic blazer

Table 7: Fabric suggestions for the school blazer

Item description	Weight	Texture	structure	Width	
				90cm	150cm
Mandy	Medium	Smooth	Plain weave	2m	1 ^{1/2}
Taffeta lining	Light	smooth	Plain weave	1 ^{3/4} m	1 ^{1/4}
Jacket Vilene	Medium	rough	Plain weave	1 ^{1/2} m	1m
Buttons with a shank	Light metal	-----	-----	-----	-----
Sewing thread	-----	-----	-----	-----	-----

4.5.3.2 Order of making the school blazer.

Fuse Vilene on the front pieces, facing, collar, sleeve head & wrist, back top part and hem.

Front

Join the front pieces with the side panels

Prepare the pockets and attach pockets

Back

Join the center back seam

Join center back to the side panel

Join back and front shoulder seams

Collar

Prepare the collar

Sleeve

Prepare the two piece sleeves

Line the sleeves

Lining

Join front lining pieces with the facings

Join the front to the side panel

Join the center back seam

Join the back with the side panel

Join shoulder seams

Pin the collar in position.

With right sides facing join the blazer and the lining

Trim and snip the curved edges so that the collar lies flat

Attach the sleeves

Hem the blazer; leave a gap that would enable you to turn the blazer to the right side.

Turn the blazer to the right side

Close the gap on the hem line.

NB: pressing is done at all stages during construction

Work buttonholes

Attach buttons.

Remove loose threads

Final pressing or send it for dry cleaning

4.5.3.3.



front view

School uniform trousers

back view



Figure 7: School uniform trousers.

The basic school uniform trouser was designed using the adobe illustrator. The front view has hip pockets, fly front zip opening, button and buttonhole on the waist band as well as the belt carriers. The back view has the bound pockets and single pointed darts. The designed trousers are suitable for school wear since it consists of all basic style features which are required on the trousers.

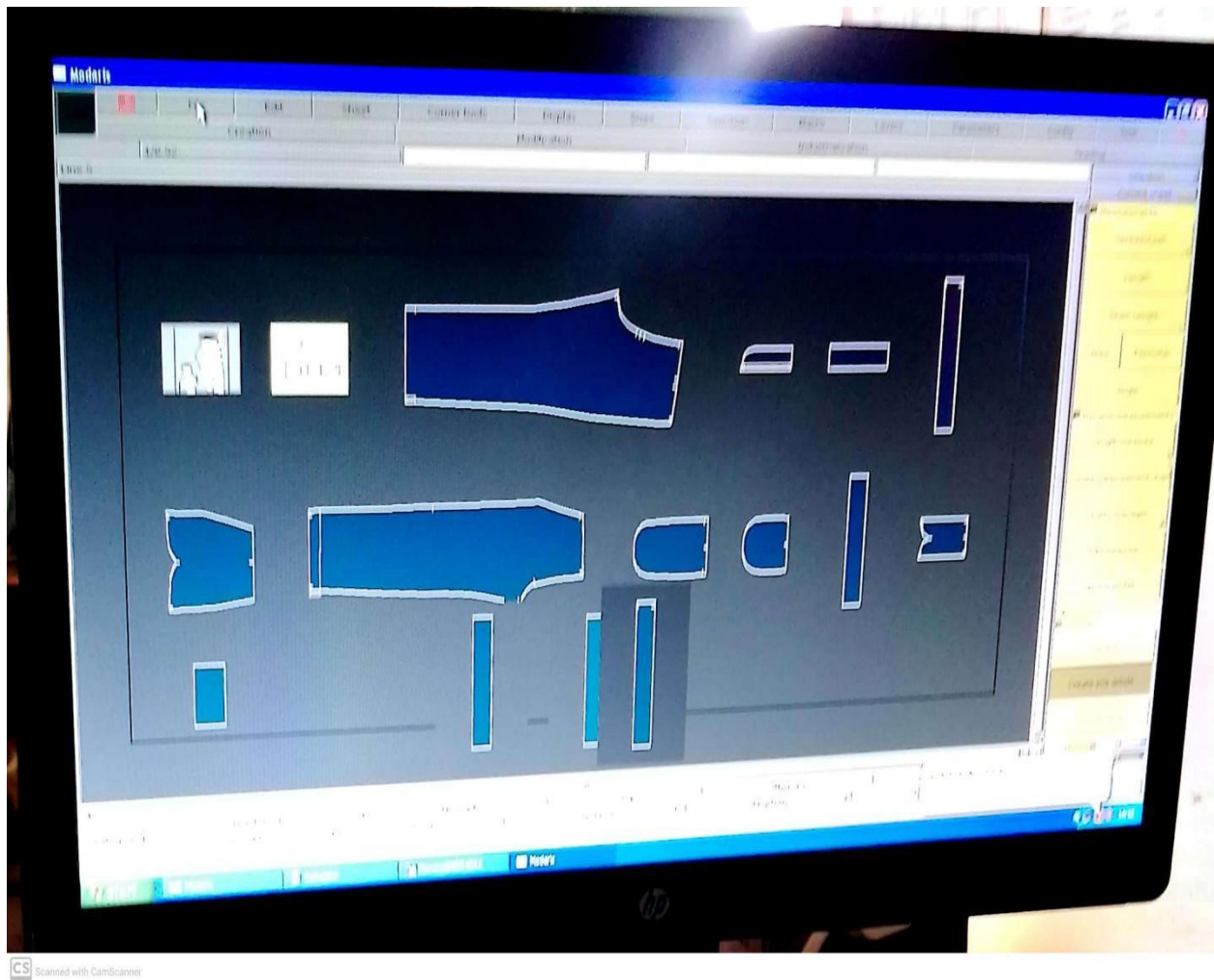


Figure 8: Digitalized school uniform pair of trousers

The basic school uniform trousers patterns were manually made before they were digitalized. The pattern pieces consist of the trouser front and back, the fly patterns, the hip pocket patterns,

the back pockets and the left and right waistbands. The developed patterns are suitable for learners aged of 9-10 years. After the patterns were digitalized they were ready for grading to other sizes. The pattern can be graded upwards to bigger sizes or downwards to smaller sizes. The grading process makes work easier for the small scale entrepreneurs since they can access multiple sizes in one pattern and it becomes economical.

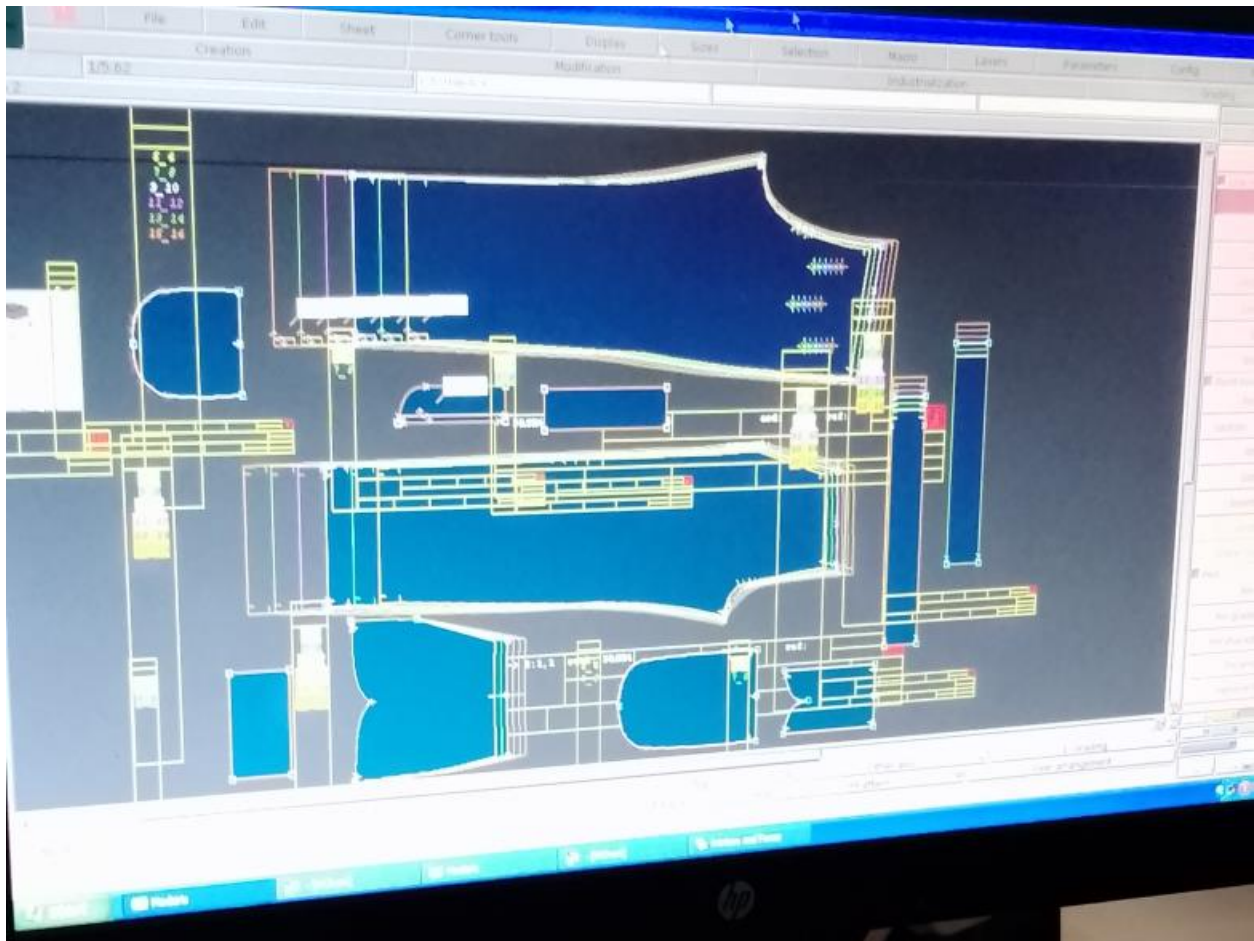


Figure 9: Graded school uniform trousers pattern pieces.

Pattern grading is a process of obtaining new patterns of different sizes from the existing ones. It involves alteration of the existing patterns to produce another pattern, (Addis Tsige, 2017). Igbo and Illoeje (2003) confirm that pattern grading involves decreasing the pattern to make it smaller or increasing the pattern to make it bigger. The school uniform trousers pattern pieces were graded to different sizes. This is an economical way of making patterns in variety of sizes. The

marker sheet pattern pieces are efficiently arranged in order to minimize fabric wastage. The pattern pieces are arranged in a manner that the material is fully utilized. We can describe this kind of layout as a tight marker. This can be an advantage for our small scale fashion entrepreneurs to cut costs on fabric wastage when they use the marker sheets.

4.5.3.3 Fabric suggestions for the school uniform trousers.

Table 8: Fabric suggestions for the school uniform trousers.

Item description	Weight	Texture	structure	Width	
				90cm	150cm
Mandy	Medium	Smooth	Plain weave	1 ^{3/4}	1 ^{1/4}
Hartel	Medium	smooth	Plain weave	1 ^{3/4} m	1 ^{1/4}
Polycotton	Light	soft	Plain weave	1 ^{1/2} m	1 ^{1/4} m
Waistband lining	-----	-----	-----	1m	1m
Vilene	Light	soft	Bonded	1 ^{1/4} m	1 ^{1/4} m
button	-----	-----	-----	-----	-----
Sewing thread	-----	-----	-----	-----	-----

4.5.3.3. Order of making a pair of trousers.

Fuse pocket facings

Overlock all the seam edges for trouser pieces

Dispose fullness on the back and front pieces

Prepare and attach front pockets

Join the front crotch seam leaving enough allowance for the zip

Prepare the fly pieces

Attach the zip using the fly front zip opening method

Work the back pockets

Join the front with the back at the side seams

Press the seams open

Prepare the left and the right waistbands

Attach the waistbands

Block the waist band at the front

Insert the hook and bar at the front

Join the trouser crotch seam at the back

Close the waist band

Join the inner leg seam

Press the seam open

Hem the trousers

NB: pressing is done after completing every process

Clean and remove all loose threads.

Final pressing.

4.5.3.4 Long sleeved School uniform shirt



Figure 11: Long sleeved school uniform shirt.

The school shirt was designed using the basic design of a classical long sleeved shirt. The design

details comprises of a shirt collar with a collar stand, a patch pocket which is placed at the right side, a double yoke, the back with a pleat at the center, long sleeves which are cuffed and the design has the option of a short sleeve for summer wear designs and buttons and buttonholes

Manually made shirt pattern

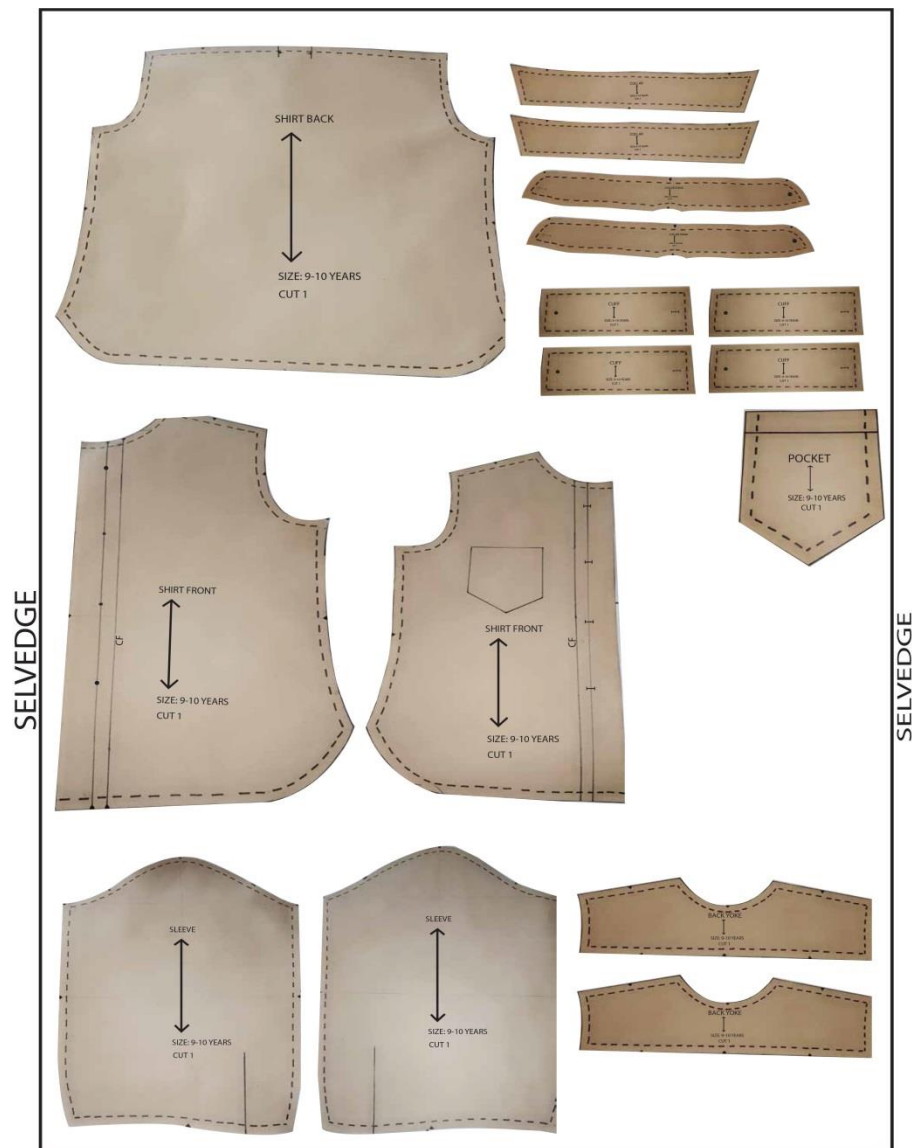


Figure 12: Manually made shirt patterns.

Digitalized shirt patterns

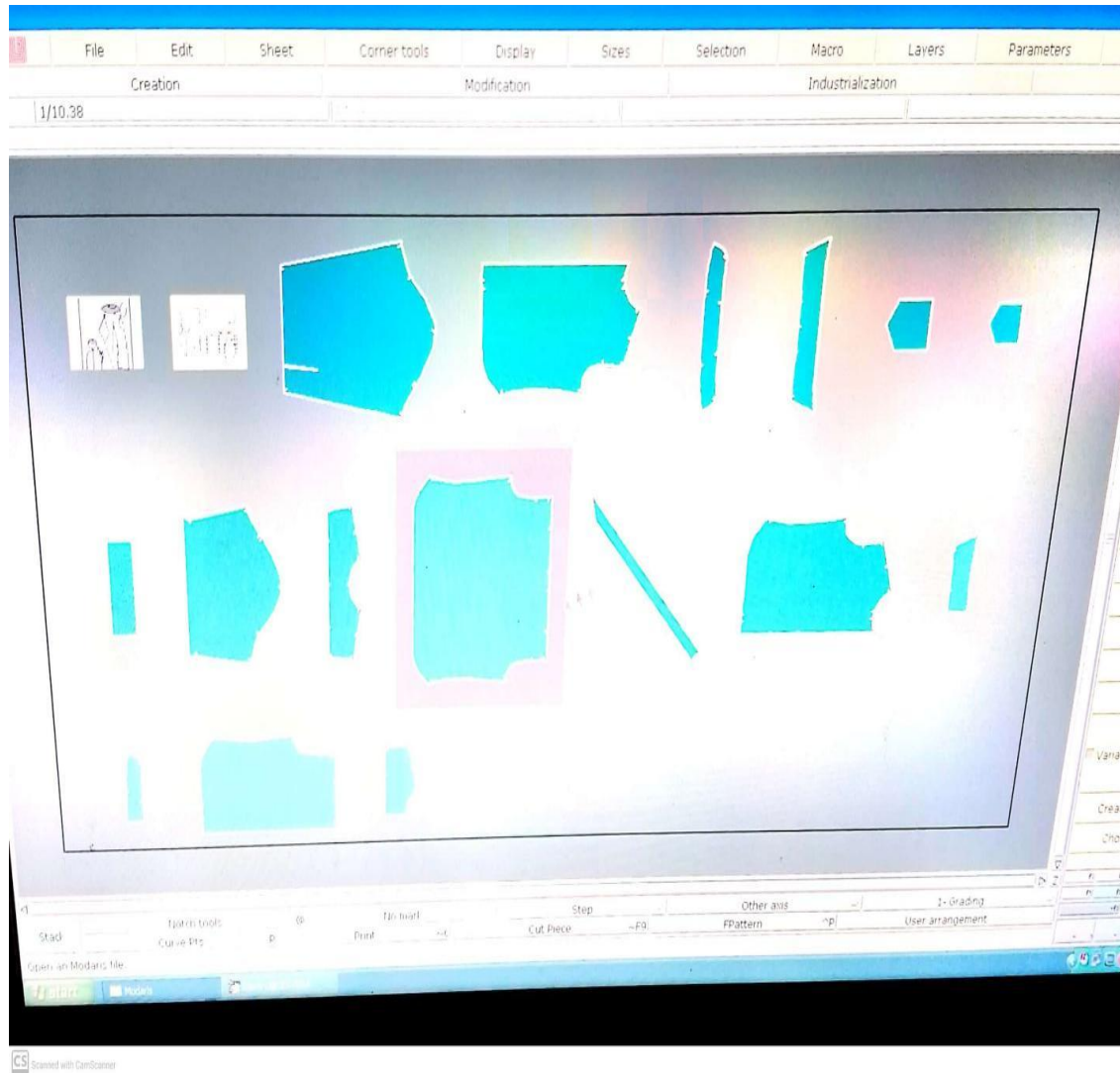


Figure 13: Digitalized school shirt patterns.

Graded shirt pattern

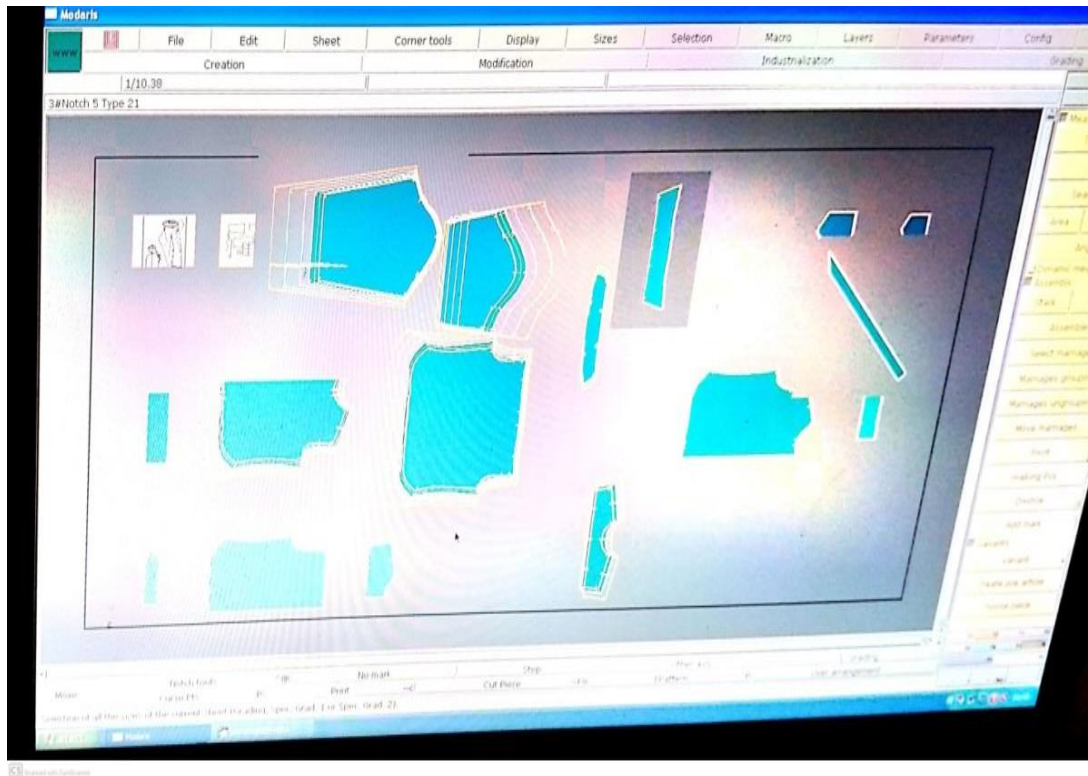


Figure 14. Graded shirt pattern.

The shirt pattern pieces were graded to six sizes. The graded patterns comprises of the following age groups 6-7 years, 7-8 years, 9-10 years, 11-12 years and 13-14 years.

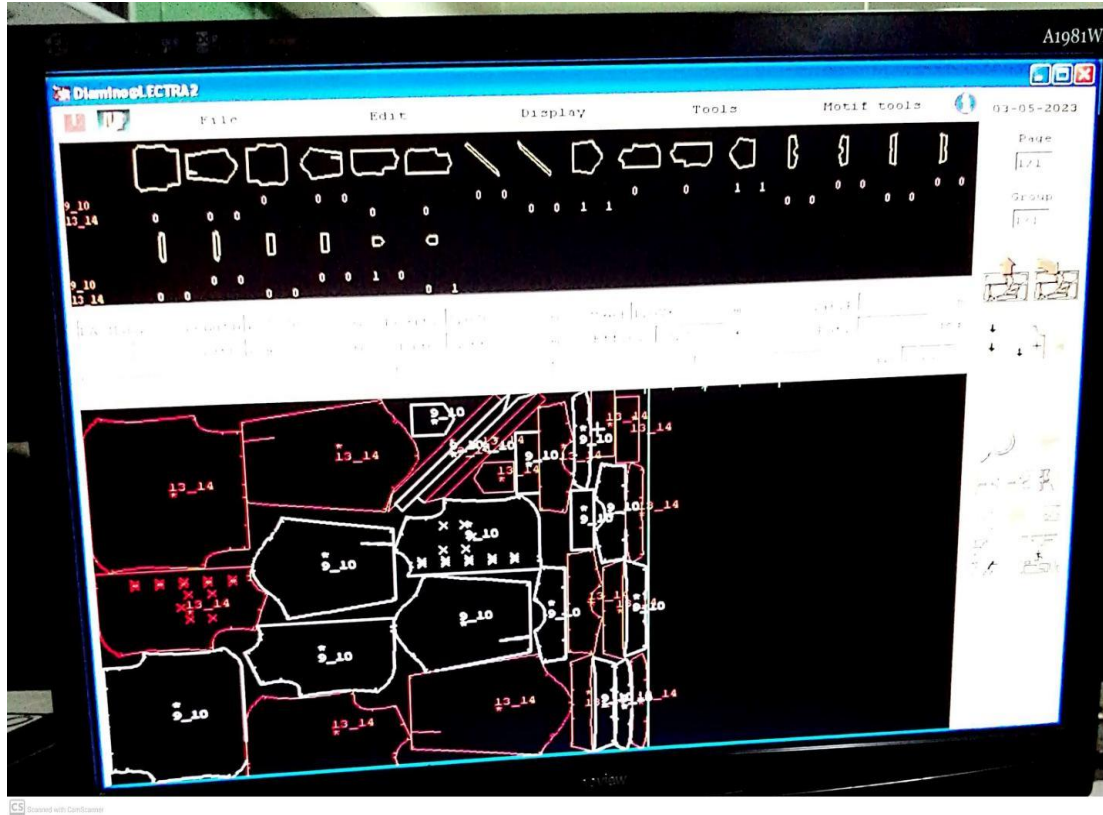


Figure 15: Marker layout for the classic school shirt.

Key; White size 9-10 years; Red size 13-14 years

Two sizes of the shirt pattern pieces were laid on one marker sheet. This type of layout is economical, it serves fabric and time since two or more sizes are laid out at once. Zulfickar (2017) posits that making patterns of garments with a computer system results in more efficient pattern markers that minimize waste and residual pieces of fabric

Table 9: Fabric suggestions for the school shirt.

Item description	Weight	Texture	structure	Width	
				90cm	150cm
Mandy	Medium	Smooth	Plain weave	1 ¹ / ₂ m	1.2m
Hartel	Medium	smooth	Plain weave	1 ¹ / ₂ m	1.2m
Polycotton	Light	soft	Plain weave	1 ¹ / ₂ m	1.2m
Shirt Vilene	Light	hard	Plain weave	¹ / ₄ m	¹ / ₄ m
Buttons	Light	soft	Bonded	¹ / ₄ m	¹ / ₄ m
Sewing thread	Matching	-----	-----	-----	-----

4.5.3.4. Order of making the school shirt.

Fuse the collar, cuff and front facing

Work a box pleat at the back

Join the back and the yoke

Prepare a patch pocket and attach it to the left side of the front

Work the overlapping hems on the shirt left and right fronts

Join the shoulder seams and the side seams

Prepare the collar

Attach the collar

Bind the sleeve opening

Join the sleeve seam

Prepare and attach the cuffs

Insert the sleeves

Hem the shirt

Work buttonholes and attach buttons

Remove all loose threads

Final pressing

NB: pressing is done after completing each process.

4.5.3.5. Pleated school uniform skirt

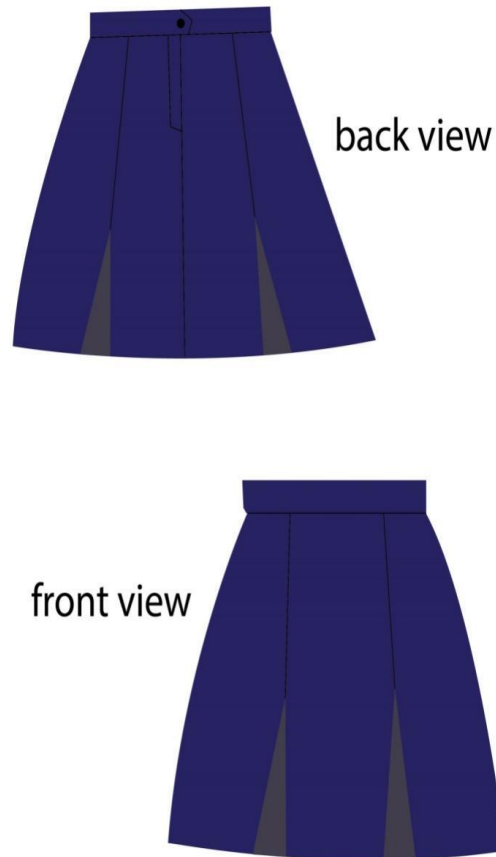


Figure 16: Pleated school skirt.

The above school uniform skirt was designed using adobe illustrator. the design details of the school skirt comprises of four inverted pleats , two at the front and two at the back, an inseam pocket, a semi-concealed zip opening, a plain waistband and button and buttonhole on the waist band. The school uniform skirt was designed in a way that from the waistline to the hip line it is close fitting and from just below the hip line the school uniform skirt is easy fitting. This type of design has the room for learners' free movement. The school going age groups are active and they run around a lot so they require designs which do not restrict their movement.

Layout of a pleated skirt

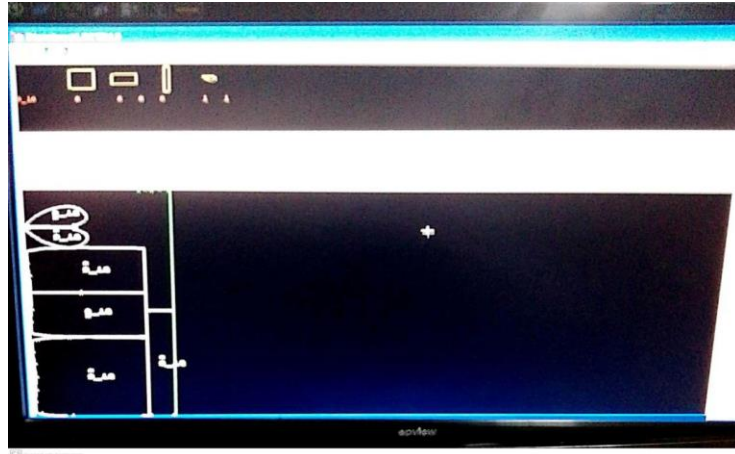


Figure 17: Layout of the pleated school skirt.

The school uniform skirt was laid out economically. Only one size was laid out. The pattern pieces comprise of the skirt front, the two skirt back pieces pocket and the waistband. The pattern is suitable for pupils aged 9-10 years age group.

Table 10: Fabric suggestions for the school skirt.

Item description	Weight	Texture	structure	Width	
				90cm	150cm
Mandy	Medium	Smooth	Plain weave	1m	0.7
Hartel	Medium	smooth	Plain weave	1m	0.7m
Vilene	Light	soft	Bonded	0.10m	0.10m
button	-----	-----	-----	-----	-----
Sewing thread	Matching thread	-----	-----	-----	-----

4.5.3.5 Order of making the school skirt.

Fuse the waistband.

Dispose fullness (work the inverted pleats on the back and front skirt pieces).

Join the center back seam leaving the zip allowance and neaten the seams separately

Insert the zip using the semi-concealed opening.

Attach the pocket pieces to the right front and right back.

Join the side seams leaving an opening for the inseam pocket and neaten them.

Prepare the waistband.

Attach the waistband.

Hem the skirt.

Work buttonhole and attach a button.

Final pressing.

NB: pressing is done after completing each process.

4.5.3.6 School dress uniform

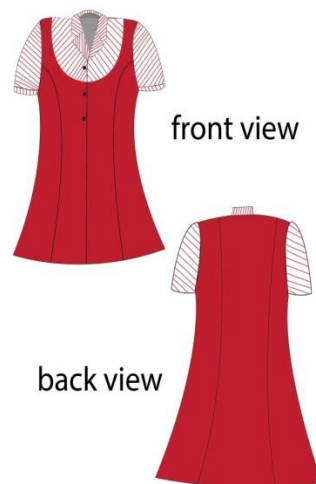


Figure 18: School uniform dress

The school dress is the most commonly used in most Zimbabwean primary schools. The small scale fashion entrepreneurs often have a challenge in making this type of a school uniform, especially on the yoke and allowances for the overlapping hems. The dress was designed in a

way that it shapes the waist of the learners and is flared from just below the waist to the hem. The flare gives enough room for free movement. Learners of the primary school going age has a lot of energy they run around a lot , thereby requiring school uniforms which does not restrict their movement.

Layout for the school uniform dress

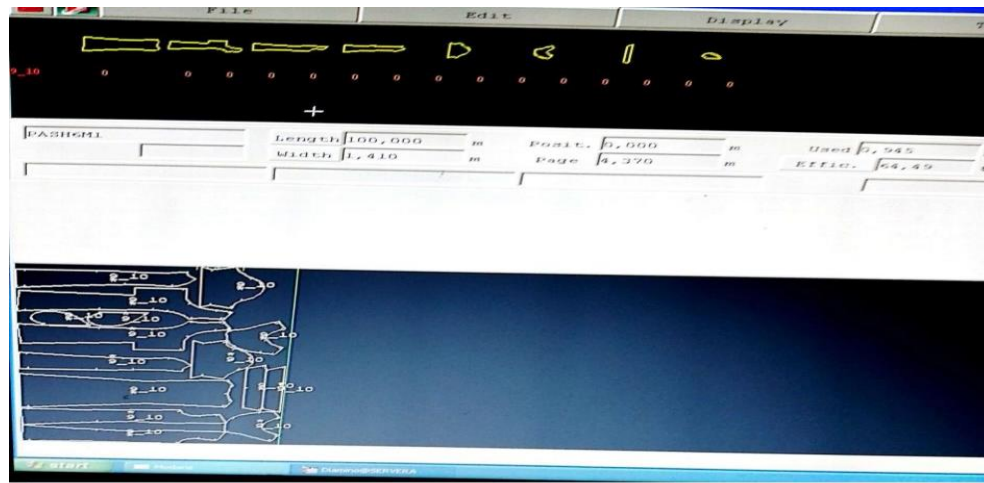


Figure 19: Layout for the school uniform dress.

The school uniform dress was laid on a marker sheet. Only one size 9-10 years was laid out. The yoke and the center front pieces have facings which are cut in one together with the garment.

4.5.3.7 Fabric suggestions for the school dress

Table 11: Fabric suggestion for the school uniform dress.

Item description	Weight	Texture	Structure	Width	
				90cm	150cm
Mandy	Medium	Smooth	Plain weave	1 ¹ / ₂ m	1.2m
Hartel	Medium	smooth	Plain weave	1 ¹ / ₂ m	1.2m
Contrast fabric	Medium	Smooth	Plain weave	³ / ₄ m	¹ / ₂ m
Vilene	Light	soft	Bonded	0.10m	0.10m
button	-----	-----	-----	-----	-----
Sewing thread	Matching thread	-----	-----	-----	-----

4.5.3.7 Order of making the school uniform dress

Fuse the front facings and collar.

Join yokes to the center front panels.

Join center front seam leaving an allowance for overlapping hems opening.

Neaten the Centre Front seams separately.

Join the side front panels to the Centre Front panels.

Join the side back panels to the Centre Back panels.

Join shoulder and side seams leaving space for an inseam pocket.

Prepare and insert an inseam pocket.

Neaten the seams

Prepare the sleeves and insert them and neaten the armhole seam.

Prepare and attach the collar

Hem the dress

Work buttonholes and buttons.

Remove loose hanging threads.

Final pressing

NB: pressing is done after completing every process.

4.6 Pattern making acronyms and symbols

TB ----- True Bias 45°

CF ----- Center front

CB----- Center Back

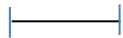
F----- Front

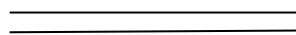
B----- Back

SS----- Side Seam

 ----- Straight grain Arrow

 ----- Notches

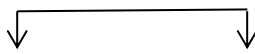
 ----- Buttonhole Position

 ----- Adjustment lines

----- Stitching line

----- Hem line

 ----- Bias Grainline

 ----- Place on Fold

 ----- Fold pleats

4.7 Advantages of the Lectra software

The use of pattern making software has a vast of advantages. The software minimizes labor, as it can be operated by a few individuals who have expertise. The software has efficient filling system and files are easily located. It minimizes the manual filing and the searching is done by the computer. Back-up files can be created in the event that the files are corrupted by the virus. The software saves time as it can grade patterns to various sizes thereby producing the exact pattern in a different size. Laying out of pattern pieces is done economically and several pattern pieces can be laid out on one marker sheet thereby saving the fabric, (Arayaphan, Intawong & Puritat, 2022).

The software has the advantage of recording history of errors that occur when it is in use. The history is used by technicians to repair it. The histories assist the technicians in tracing the faults and giving diagnosis to the problem. It also has the mileage system which shows that after a certain period of time the machine requires servicing. The mileage meter alerts the operators that the software is now due for servicing and to have latest versions of the software installed. The function helps to keep the software in good condition, (Arayaphan et al, 2022)

4.7.1: Disadvantages of the software

The use of this software also has its disadvantages. Well trained personnel can operate the machinery. Those with expertise can operate the software leaving out those who lack technical skills. The use of software minimizes labor force thereby leading to the retrenchment of most workers who lack technical skills.

The software is expensive to buy and is costly to maintain, as most of the products used for servicing of the software are imports and they require foreign currency to purchase them. The technicians who repair the software are not local, thereby making the maintenance of the machinery expensive. The software can only be well maintained with companies which are financially stable. In order to continue enjoying the use of the software, the operating license is renewed annually. The operating license is paid using foreign currency. This makes the software too expensive. Important information can be lost if files are corrupted by a virus. The software is not user friendly as its products can only open on the machines which it is installed.

4.8: Chapter Summary

This chapter has presented information on the research findings, data analysis and discussion. The data was presented in forms of graphs, charts and tables. Observations were presented in form of photographs. The next chapter five focused on presenting the summary for the whole thesis.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusions from the findings and recommendations. The following objectives guided the study.

The main objective of this study was to analyze the quality of school uniforms made by small scale fashion entrepreneurs in Zimbabwe. The objectives that guided the study were:

- Examine the quality of school uniforms made by small scale fashion entrepreneurs.
- Establish challenges faced by small scale fashion entrepreneurs in producing quality school uniforms.
- Develop strategies that can mitigate challenges faced by small scale fashion entrepreneurs in producing quality school uniforms.

5.3: Summary of the study

5.3.1 Chapter 1, 2 and 3

The researcher analyzed the quality of school uniforms being produced by small scale fashion entrepreneurs. The school uniforms could not meet the dimensions of quality of a standard school uniform which consist of the suitability of material, correct size and good construction combinations that would guarantee functionality. The study of quality could make the production of quality school uniform simpler, collaborative and more cost effective. The in-depth literature which sought to find answers from other authorities on the quality of school uniforms was revealed in chapter 2. The literature revealed that there was little research on the quality of school uniforms in Zimbabwe. Quality, garment fit and challenges were examined as these contribute to the overall outlook of the learner. This chapter also examined the theoretical framework where the prescriptive theory was used in the research due to its accurate

prescriptions which facilitates reliable and effective decision making. The researcher employed the interpretivist paradigm to gain a deeper understanding of quality of school uniforms produced by the small scale entrepreneurs. The research engaged mixed methods approach which gave more detailed answers to the research questions. The study sample comprised of small scale fashion entrepreneurs, learners and parents who were capable of giving satisfactory answers to the research questions. The researcher used questionnaires, interviews and observations as data collection instruments to gain a deeper understanding of the quality of school uniforms produced by the small scale entrepreneurs.

5.3.2 Summary of findings of the study

Findings presents that a small scale fashion entrepreneur business was male dominated as compared to their female counter parts. Most of the fashion entrepreneurs were still in their early stages in terms of experience and the majority had no professional qualifications. Few small scale fashion entrepreneurs were holders of the National foundation certificate. Stakeholders preferred buying school uniforms from small scale fashion entrepreneurs due to the low prices charged, which most parents can afford due to high inflation and economic challenges the country is going through.

5.3.3: Summary of research findings from the Research questions.

Research findings from question one revealed that the small scale fashion entrepreneurs were using suitable fabric for the school uniforms. However, the small scale fashion entrepreneurs did not consider the fabric properties when choosing suitable materials. Mandy was mostly used and yet it absorbs a lot of heat which made the learner to be uncomfortable in it when it is hot. The quality of their school uniforms was also compromised by the unproportioned parts, poorly shaped necklines, crotch lines and armholes. The uniforms produced were either too loose or too tight.

Research findings from question two revealed that the fashion entrepreneurs encountered a vast of challenges which resulted in the production of school uniforms that are of low quality. The challenges emanated from lack of expertise in pattern making, lack of adequate sewing equipment, poor working conditions and lack of pattern making equipment. The challenge of inadequate machinery highly compromise the quality of their products. However, the methods

they employed when constructing patterns was a major contributor to the production of low quality school uniform, especially when using free hand garment cutting, which does not give room for corrections once the garment is cut.

Research findings from question 3 which sought to establish strategies to mitigate the production of poor quality school uniform. The major strategies were that fashion entrepreneurs to access digital pattern, availing pattern making manual to the fashion entrepreneurs, introduction of refresher courses ,(capacity building) and availing commercially made patterns to the fashion entrepreneurs in order to curb the production of school uniforms with poor quality.

With the strategies the researcher designed and developed digitalized patterns for school blazer, shirt, a pair of trousers, skirt and dress. The development of these patterns may help to mitigate the production of school uniforms that are of low quality.

5.4 Conclusions

Based on the findings the study concluded that:

- 1,The quality of school uniforms produced by small scale fashion entrepreneurs were of low quality basing on the fitting challenges observed on the products worn by the learners
2. The quality of school uniforms was compromised mostly by poor pattern making skills among the entrepreneurs
3. The main strategy to improve the quality of school uniforms produced by the entrepreneurs is upgrading of skills to meet high standard production processes

5.4: Recommendations.

The researcher made the following recommendations

- The Ministry of small to medium enterprise to avail loan facilities to small scale fashion entrepreneurs in order for them to purchase machinery and cater for financial constraints.

- The Local authorities to provide spacious renting work places for small scale fashion entrepreneurs to improve their working space and enable cutting out without much constraint.
- Design and produce low cost hard copy patterns on a commercialized scale in order to cater for fashion entrepreneurs who have challenges in making patterns for making fashion products.

5.5: Recommendations for further studies.

In conducting the study, the researcher identified some critical areas upon interacting face -to -face with the fashion entrepreneurs, which need to be addressed and therefore recommends further studies to be carried out.

- Design and develop a handbook in patternmaking, laying and cutting out, construction process with tips on how to produce quality garments in simple language that can be easily understood by the entrepreneurs with lower levels of literacy.
- A comprehensive study may be carried out with entrepreneurs specializing in various areas of production and services to find out the quality of their products and support needed for them to improve their services and boost production.

The next section presents a sample product produced by the researcher for commercialization.

5.6, Product Produced by the researcher

Sample of commercial pattern

062011

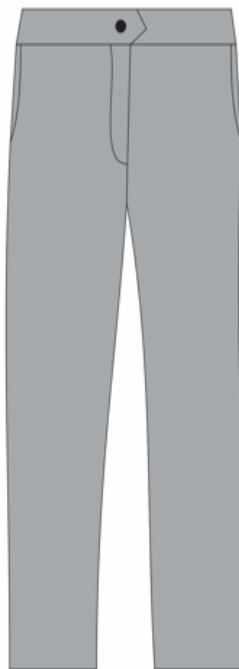
FASHY LEE



(A)

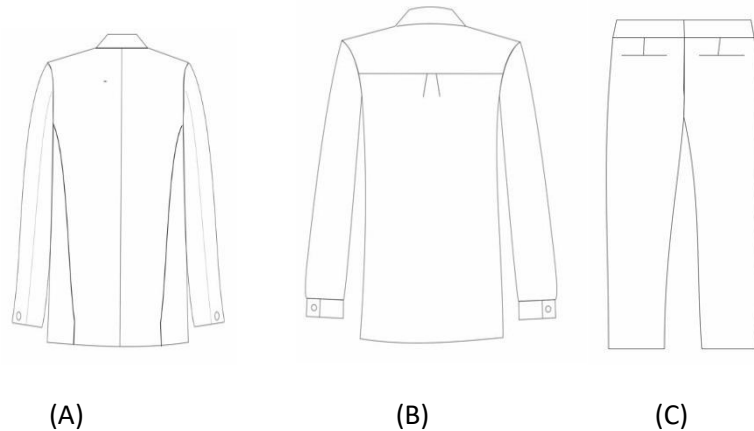


(B)



(C)

Figure 20: front view and back view of the pattern envelope



062011

PASHYLEE, Blazer, shirt and trousers.

A is a classic school uniform blazer. It is lined, has two piece long sleeves, a breast pocket, lower patch pockets on the front, a revers collar, 3 buttons on the center front and the back view has a center back seam.

B is a classic long sleeved shirt. It has a shirt collar with a collar stand a patch pocket, a yoke, a box pleat at the back, cuffed long sleeve.

C.is a pair of trousers with hip pockets, bound pockets at the back, a fly front zip opening and a waistband with 6 belt carriers, button and button hole on the waist band.

Body measurements		7- 8 yrs	9-10 yrs	11- 12 yrs.'	13 – 14 yrs.
Bust		47cm	50cm	52 cm	54 cm
Waist		45	47	49	51
Hip / seat		47	50	52	54
Back neck to waist		19	20.6	21,8	23
Size		7- 8	9-10	11-12	13- 14
Blazer	90cm	1 ¹ / ₂ m	1 ³ / ₄ m	1 ³ / ₄ m	2m
	150cm	1 ¹ / ₄ m	1 ¹ / ₄ m	1 ¹ / ₄ m	1 ¹ / ₂ m
Lining	150cm	1m	1m	1m	1m
Classic shirt	90cm	1 ¹ / ₄ m	1 ¹ / ₂ m	1 ¹ / ₂ m	1 ³ / ₄ m
	150cm	1m	1m	1 ¹ / ₄ m	1 ¹ / ₄ m
Trousers	90cm	1 ¹ / ₄ m	1 ¹ / ₄ m	1 ¹ / ₂ m	1 ¹ / ₂ m
	150cm	1m	1m	1 ¹ / ₄ m	1 ¹ / ₄ m
Notions:					
Blazer:		2cm blazer buttons with a shank, matching thread			
Shirt:		1cm shirt buttons and matching thread			
Trousers:		waistband lining, button or hook and bar			

Fabric suggestions	
Blazer:	Mandy , taffeta lining, jacket vilene
Shirt:	polyester-cotton, Mandy, hartelle, shirt vilene
Trousers:	Mandy, hartelle, vilene, poly- cotton for pockets

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APPENDICES

Appendix 1: Ethics letter/ Permission letter to conduct research

ANNEX 19 Form GRSD 17 SAD 5/2021

CHINHOYI UNIVERSITY OF TECHNOLOGY
RESEARCH ETHICS CLEARANCE LETTER

NAME OF RESEARCHER(S): Lillian Zindonda **ID:** 70-130783-L-18
Student Registration number: C15126534H
SCHOOL OF: Art and Design

APPROVED RESEARCH TITLE:

An analysis of the quality of school uniforms being produced by small scale fashion entrepreneurs in Zimbabwe towards the designing and development of digital patterns. (2020-2023)

I hereby confirm that the above mentioned researcher is a postgraduate researcher at Chinhoyi University of Technology. The proposed study met all the requirements as stipulated in the University policies and guidelines and has been approved by the relevant committees.

The proposal adheres to ethical principles as outlined by the university ethics guidelines. Permission is hereby granted to carry out the research as described in the attached approved proposal.

The main objective of the research is:

To Analyze the quality of school uniforms made by small scale fashion entrepreneurs.

Expected Outcome:

To design and develop digital patterns for school uniforms.

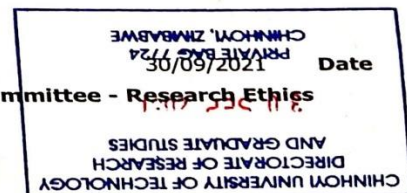
Best Regards



Acting Chairperson, University Research and Innovation Committee - Research Ethics

Tel: +263 6721 22203-5

E-mail: researchandgraduatestudies@cut.ac.zw



Appendix 2 questionnaire for small scale Fashion entrepreneurs

My name is Lillian Zindonda, a student studying towards Master of Philosophy degree in clothing and fashion designing at Chinhoyi University of Technology. I kindly ask for your participation in my research project by answering this questionnaire honestly. My study topic is ‘Analysis of the quality of school uniforms produced by fashion entrepreneurs in Zimbabwe towards development of digital patterns for fashion entrepreneurs.’

Section A: Respondent profile

Instructions

a) Do not write your name on the questionnaire

b) Tick the relevant box for your response

1. Gender

Male ☐ Female ☐

2. Age group

18 - 30 ☐ 31-40 years ☐ 41-45 years ☐
46 years and above ☐

3. Academic Qualification

Grade 7 ☐ O’Level ☐ A’ Level ☐
Any other specify

4. Professional qualification

NFC in Clothing ☐ NC in Clothing ☐
ND in clothing ☐ HND in Clothing ☐
Any other specify

5. Experience as a fashion entrepreneur

0-2years ☐ 3-5 years ☐ 6- 7 years ☐
8-10 years and above ☐

Section B

6. Explain the methods you are using when making patterns for school uniforms?

.....
.....
.....

7. Do you have any expertise in pattern making?

Yes No

8. If yes , are you able to construct your own patterns

Yes No

9. What challenges do you encounter as a fashion entrepreneur when constructing patterns for school uniforms?

Lack of pattern making techniques lack of pattern making tools

No access to pattern making manuals

Any other specify

10. Is there any difference between the quality of school uniforms that you produce and those produced from reputable uniform Producers?

Yes there is a difference No there is no difference

Any other specify.....

(b) If your answer is yes, what causes the quality of your products to differ from those produced by reputable uniform producers?

Choice of material neckline shaping and collars

Unproportioned parts Armhole shaping & sleeve insertion

Crotch line shaping stitchery

Any other specify.....

(c) What are the fitting challenges of the uniforms that you manufacture?

Fits well uniforms too tight

Uniforms too loose

Any other specify.....

11. State the possible solutions to the challenge that you encounter when making school uniforms.

Access to digital patterns

Avail hard copy patterns in shops

Have pattern making manual

Refresher courses

Government to provide business capital

Subcontracting processes

Subsidized rental for work space

Any other specify

12. How best can you produce good quality school uniforms that can compete with reputable uniform producers in large industries?

Easy access to ready to use patterns

Avail a pattern making manual Capacity building

Any other specify.....

.

Appendix 3: Interview guide for small-scale fashion entrepreneurs

Questions that address the research questions.

Respondent's Profile

1. Gender.

Male

Female

2. Age group

3.

18 – 25

26 -30

31 -35

36 -40

41-49

50 & above

4. Academic qualifications

Grade 7

O' Level

A' level

Any other specify

5. Professional Qualifications

NFC in clothing

NC clothing

ND in CT

HND in CT

Degree

Any other specify.....

6. Work Experience

0-2 years

3-5years

6-10 years

11-15 years

16 years and above

7.Explain the construction methods you are using when making school uniforms?.....

.....
.....
.....
.....

8. Are your customers satisfied with quality of your products? If not then why, are they satisfied the by the quality of your products?

.....
.....
.....
.....
.....
.....

9. What challenges are you facing when making school uniforms?

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.....
.....
.....
.....
.....

10. State possible solutions for the challenges that you encounter when making school uniforms?

.....
.....
.....
.....
.....

12. What is the most effective method to adopt in order for you fashion entrepreneurs to produce standard uniforms that can compete with reputable uniform producers.

Appendix 4. Questionnaire for stakeholders

Analysis of the quality of school uniforms produced by small scale fashion entrepreneurs in Zimbabwe towards the designing and development of digital patterns for fashion entrepreneurs.

My name is Lillian Zindonda, a student studying towards Master of Philosophy degree in clothing and fashion designing at Chinhoyi University of Technology. I kindly ask for your participation in my research project by answering this questionnaire honestly.

Instructions

- c) Do not write your name on the questionnaire
- d) Tick the relevant box for your response

Section A: Respondent profile

1, Gender

Male ☐ Female ☐

2. Age group

18-25 years ☐ 26-30 years ☐ 31-40 years ☐

41-50 ☐ 51 years and above ☐

3. Where do you buy your children's uniforms?

Reputable shops ☐ fashion entrepreneurs ☐

Hand me downs

☐

4. What do you consider when buying a school uniform? Is it the price or the quality?

Price

Quality

5. Are you satisfied with the quality of uniforms being produced by the fashion entrepreneurs?

Highly satisfied

partially satisfied

Not satisfied

6. What are the fitting challenges that your children encounter when wearing school uniforms?

Parts of the uniforms not proportional uniforms too tight

Uniforms too loose crotch lines poorly shaped

Any other challenge please specify.....

7. What are the possible solutions to these fitting challenges?

Development of digital patterns

Avail hard copy patterns

Refresher courses for fashion entrepreneurs

Avail pattern making manual

Any other solution please specify.....

8. How best can these challenges be addressed

- ❖ fashion entrepreneurs to have access to low cost digital patterns
- ❖ fashion entrepreneurs to have centralized pattern making bank
- ❖ Fashion entrepreneurs to have refresher courses in pattern making
- ❖ Government to provide business capital
- ❖ Subcontracting processes
- ❖ Provide subsidized rental for working space

Any other option please specify.....

Appendix 4: Observation guide on the analysis of the quality of school uniforms being produced by fashion entrepreneurs towards the designing and developing of digital patterns

The researcher visited 20 fashion entrepreneurs observations were made on the following:

Quality of school uniforms in terms of:

- Panels and parts of school uniforms proportional and balanced
- Neckline shaping and collars
- Armhole shaping and insertion
- Crotch line shaping
- Stitchery of the garment

Fitness of the school uniform whether it:

- Fits well
- Uniforms too tight
- Uniforms too loose

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