UNIVERSITY OF EDUCATION, WINNEBA

ENHANCING FASHION'S SUSTAINABLE FUTURE THROUGH GARMENT REMODELLING: A CASE STUDY OF FASHION INDUSTRY IN THE KUMASI METROPOLIS

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A Thesis in the Department of FASHION DESIGN AND TEXTILES EDUCATION, Faculty of VOCATIONAL EDUCATION, submitted to the School of Graduate Studies, University of Education, Winneba, in partial fulfillment of the requirements for the award of the Master of Philosophy (Fashion Design and Textiles Technology) degree.

OCTOBER, 2020

DECLARATION

STUDENT'S DECLARATION

I, **SOPHIA LITITIA OBENG,** declare that this Thesis, with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE: .....

DATE: .....

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with the guidelines for supervision of Thesis as laid down by the University of Education, Winneba.

SIGNATURE: .....

DATE: .....

NAME OF SUPERVISOR: **NINETTE AFI APPIAH (PhD)**

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DEDICATION

The research work is dedicated to my late mother, Rita Thelma Mensah, who motivated me to further my education even at the point of death on her sick bed.

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ABSTRACT

This study's main aim was to assess fashion sustainable future through remodelling of used garments. The study was conducted in the Kumasi Metropolis with respondents sampled from fashion industry players in the Metropolis. The study employed mixed method approach since both qualitative and quantitative data were collected. The two instruments for the data collection were interview and questionnaire. The research design employed was descriptive design. The study employed both purposive sample and convenience sample methods from sample size of 180 respondents. The findings of the study show that fashion industry players use different remodelling methods and some of these methods were combination of two or more materials, reshaping, beading, quilting, patching and cutting down. It was also found that remodelling of garments influences the economic activities of the industry. It was also found that the future of the fashion industry is highly sustainable with improve methods of remodelling. It is recommended that the fashion industry players pay much attention to remodelling since it can boost the economic activities of the industry.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The garment industry is reportedly the world's third biggest manufacturing industry after automotive and technology industries. People are now more inclined to buy fashionable garments in the world of fashion, and so the consumption of clothing has risen dynamically. The consumption of these clothing has created jobs and growth in developing nations. The USD 1.3 trillion textile industry employs more than 300 million workers worldwide along the supply chain; cotton manufacturing alone accounts for nearly 7% of all jobs in some low-income countries (Euromonitor International Apparel & Footwear, 2016).

Deloitte (2013) noted that in different manufacturing plants around the globe, more than 80 billion clothes are produced. Although the world's total population is only 7.6 billion (United Nations, 2017), the reasons for this are because people now need material things to reflect society's status, perception, and position. These statistics clearly show that significant clothing production is taking place, and that customers will make a decisive shift if the consumption of clothing is influenced in a more sustainable way. But this rapid fashion pattern or clothing overconsumption is at the detriment of the natural environment (McGregor, 2007).

Related to clothes being used and the lack of remodelling, more than $500 billion in value is lost every year (Ellen MacArthur Foundation, 2017). Worldwide, clothing utilisation – the average number of times a garment is worn before it ceases to be used – has decreased by 36% compared to 15 years ago (Ellen MacArthur Foundation, 2017).

Although many low-income nations have a relatively high rate of clothing use, rates are much lower elsewhere. In the US, for instance, just about a quarter of the global average is worn for clothing.

In China, where clothing use has decreased by 70% over the past 15 years, but has increased in developing countries such as Ghana, the same trend is emerging (Ellen MacArthur Foundation, 2017). Globally, customers miss out on USD 460 billion of value each year by throwing away clothes that they could continue to wear, and some garments are estimated to be discarded after just seven to ten wears (Morgan & Birtwistle, 2009). This rate of consumption and throwing away clothes does not only damage the environment but also creates various negative impacts socially (Goworek, 2011; Moore, 2011).

Less than 1% of the clothing used is recycled into new clothing, reflecting a loss of more than USD 100 billion worth of materials per year, according to the Ellen MacArthur Foundation (2017) survey. High costs are involved with disposal, as well as major value losses (Morgan & Birtwistle, 2009). Increasing awareness of the environmental and social concerns surrounding the fashion industry have led to a rise in the implementation of sustainability initiatives. There has been a growing concern of remodelling garment to improve the environmental impact and the social responsibility throughout the supply chains (Moore, 2011).

Remodelling is a form of recycling when an out of fashion article is reconstructed to meet another desired requirement (Olugbamigbe, 2010). Olugbamigbe further explained that remodelling can be a process of enhancing the appearance of old articles, refurbishing old items or recycling out of used materials or items in order to make useful

and also enhance their face values. Remodelling of clothing had been practiced for generations in the home. According to Fisher et al. (2008), until the mid-twentieth century clothing was considered to be valuable commodity and clothes were regularly maintained and repaired to prolong garment use.

However, within the last two or three generations the cultural and economic value attributed to clothing has on the whole dramatically changed and the practice of remodelling or renovating clothing has largely disappeared while at the same time the fashion industry has increased the availability of inexpensive, mass-produced ready to-wear clothing. They further (2008) argued that another possible reason for a general disengagement with clothing repair is a lack of technical ability and skill.

Fisher et al. (2008) agreed that few wearers pursue the repair of worn or damaged garments, but as a common, routine operation, there seems to be little evidence of repair work, except in relation to button stitching and hem fixing. Palmer (2001) took the view that fabrics were initially carefully treated and repaired for economic purposes, because labor was cheap relative to the cost of textile materials and clothes. As an example, it was normal for couture houses to perform clothing maintenance for free or for a nominal fee in the years preceding the 1950s, although this service received no direct promotion (Palmer, 2001). The tradition of fixing and modifying clothes in contemporary society has, however, largely vanished within two generations.

There is an emerging grassroots movement within sustainable fashion fringe groups, according to Palmer (2001), which has emerged across various blogs and social networks, which has revived an interest in the use of craft skills for sustainable fashion outcomes. While the creative practice of clothing remodelling seems to be

representative of contemporary craft activities and has reignited an interest in the creative potential of clothing modification, culture seems to be distant from such practices in general (Fisher et al., 2008). Although Fisher et al. (2008) noted that wearers as a community are not engaged in the practice of clothing repair or alteration; fashion houses may remodel or renovate by using worn out parts to renovate styles by reconfiguring or interchanging the modules; these types of products are versatile to the need of the wearer to include the option of standardized products that provide the opportunity for (Quinn, 2002).

1.2 Statement of the Problem

In our everyday life, clothing is certainly so indispensable that its existence has been taken for granted. It is not so well recognized, however, that the textile industry, second only to oil, is one of the main industrial polluters (Sollano, 2017). The manufacturing of materials and textiles, as well as the production and distribution of clothing, has put an extremely heavy strain on the environment as a whole. In particular, in response to changes in the fashion industry, the introduction of quick fashion in the last few decades has further escalated the problem with its low cost and versatility in design, quality, delivery and speed to the market (Bhardwaj & Fairhurst, 2009).

Consumers are causing a strain on natural and human capital at unprecedented levels due to the increasingly growing production, purchase and disposal of garments. Morgan and Birtwistle (2009) indicated that consumers throw away used clothes that they could have remodelled. Each year, approximately 350,000 tonnes of used clothing is sent to UK landfills but research suggests that this figure could be significantly reduced if wearers were actively and routinely to remodelled those clothes (Worldwide Responsible Accredited Production (WRAP, 2012). McKinsey and Company (2016)

study also reported that in under a year, more than half of the fast fashion items used worldwide are disposed of. This leaves economic potential untapped, puts pressure on resources, pollutes and degrades the natural environment and its habitats, and, on a local, regional and global scale, produces major negative social impacts.

Much of the dump clothes from Europe, America and now Asia found themselves in Africa and for that matter Ghana. Mc Donough and Braungart (2013) reported that, figures from United Nations Com-trade Database shows that Ghana spent $65 million on importing used clothes from the UK annually. Again in 2014, Dutton, estimated that Ghana imports 30,000 tons of secondhand clothes each year. The position of the fashion industry has received little attention on how remodel/renovate old clothes into new ones can be done to help reduce the importation of dumped clothes from other parts of the world.

Going through the literature, it was also clear that much work has been done concerning remodelling of clothes in terms of it being fashionable, its acceptance consumers, waste management issues, social innovation, career closet and others (Afenyo 2019). However, there is no study on using different methods to enhance fashion's sustainable future through garment remodelling. This in a way has created a gap in knowledge. This study therefore seeks to add to the body of knowledge by identifying different methods of remodelling of used clothes in Ghana, its economic implications and also its sustainability.

1.3 Purpose of the Study

To examine how to sustain the environment through remodelling of used clothes.

1.4 Specific Objectives

The specific objectives are:

1. To establish the different methods for remodelling used clothes in some selected fashion houses in the Kumasi Metropolis
2. To determine the effect of remodelling of used clothes on the Ghanaian economy
3. To explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance
4. To develop a framework for remodelling of used clothes in Ghana

1.5 Research Questions

The following research questions will be developed

1. What methods can be used in remodelling used clothes among selected fashion houses in the Kumasi Metropolis?
2. How will remodelling of used clothes impact the Ghanaian economy?
3. What sustainability practices do fashion houses in the Kumasi Metropolis employ in terms of their social and environmental performance?
4. What framework can be used in remodelling of used clothing in Ghana?

1.6 Scope of the Study

The study covers the fashion industry in Kumasi Metropolis in the Ashanti Region of Ghana. The fashion designers responsible for the designing garment for consumers will be the focus. The study specifically concentrates on the methods of remodelling of used clothes; impact of remodelling of used clothes on the economic activities of the industry; framework for remodelling of used clothing; and way of sustaining remodelling with regards to social and environmental practices.

1.7 Significance of the Study

This study will encourage opinion leaders and stakeholders to endorse the wearing remodeled garments as part of a new trend, thereby encouraging the designers to produce more of those to their wearers to overcome outdated social stigmas. In addition, the results of the study will encourage government and the policy makers to make a policy on remodelling of used clothes in order to protect the environment.

This study intends to help Ghanaians gain both a garment and a service through a number of different approaches. A garment can, for example, be complimented with a take back scheme that allows the wearer to hand the item back to the seamstress or designer when they have ceased to wear it in order for them to be remodelled. The wearers themselves will carry out the remodelling themselves with the possibility for new niche business opportunities that could revive ailing businesses, especially now that the fashion industry is gaining impetus. Therefore, producers will be advised to reduce the over production of fashion garments and diverse business opportunities can flourish: including repair and alteration services and remodelling services that can positively impact on the amount of textile waste being generated through excessive consumption.

Furthermore, the findings of the study will encourage and support Ghanaians to engage in used clothes remodelling to improve on the economic activities of the fashion industry and also ensure fashion sustainability in the future. The study is exploratory and thus, adds new knowledge to the existing body of literature on remodelling of used garment. The study also suggests further research areas to tease out research interests into future studies within the academia.

1.8 Delimitation

This study focuses on remodelling of used clothes. Specifically, the study covers methods for remodelling, effect of remodelling on economic activities of the fashion industry, and how to sustain it socially and environmentally. Due to time constraints as well as financial difficulty the study was conducted in the Kumasi Metropolis.

1.9 Limitation

In undertaking a study of this nature, there is the need to choose a reasonable number of respondents to form the sample size so as a concise research could be carried out with reasonable probability of success. The study considered only Kumasi Metropolis, based on the time at the researcher's disposal.

1.10 Organisation of the Study

This work is organized into six main chapters. The Chapter One consists of the introduction which deals with the background to the study, statement of the problem, research objectives, and research questions, scope of the study, significance of the study, and organization of the study. Chapter Two reviews theories and concepts, which are related to the study. It presents theoretical and empirical perspectives of remodelling of used clothes.

The conceptual framework that guides the study is also discussed in the second chapter. Chapter Three focuses on the methodology. It presents the research approach, research design, population, sample size and sampling technique, data collection, validity and reliability of the study, data analysis and ethical consideration of the study. Chapter Four presents the data analysis. Chapter Five discussion and results and Chapter Six highlights the summary of the major findings, conclusions and recommendations.

1.11 Definition of Term and Abbreviation

Alteration: This is the act or process of changing something

Cradle-to-Cradle: This is the design and production of products of all types in such a way that at the end of their life, they can be truly recycled; or is a business strategy that aims to eliminate waste by repurposing resources from one process for use in another.

Cutting Down: This is done by cutting of old garment into one of a smaller size, either of the same style as the original garment or different style.

Cutting Through: This is a process of cutting out designs from used clothes without unpicking the seams.

End-of-Life Cycle: This is the final stage of a product's existence.

End-of-Use-Phase: This is the end of product life cycle which creates a lot of waste.

Freshening -Up: This type generally implies only slight alteration such as changing style of collar, cuffs, lengthen of sleeve or skirt etc.

Itinerant: a person or worker who travels from place to place working for short periods of time in different places.

Persuasion: this to find way to encourage individuals, such as offering data or incentives.

Remodelling: The process of changing the functionality and design of an article into something different to serve another purpose.

Ripping Off: Unpicking the seams

BCG: Boston Consulting Group

CBA: Central Business Area

CFC: Collaborative Fashion Consumption

LMICs: Low and Middle-Income Countries

SEM: Structural Equation Modeling

SHC: Secondhand Clothes

SOI: Sustainability Oriented Innovation

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

After the automobile and technology industries, the textile industry is currently the world's third largest manufacturing industry. The consumption of fashion in developed nations create employment and development. It also leaves them with the brunt of the environmental and social costs if it could be a major issue if not tested (House of Commons report, 2019). This section will review theoretical and conceptual issues for reforming fashion's sustainable future through remodelling and renovation. It discusses topical and empirical findings within the context of remodelling and renovation of used clothing. The conceptual issues reviewed will be synthesized with the theoretical and empirical review and the conceptual framework for the study. The review is categorized into themes in relation to the research questions.

2.2 Conceptual Review

2.2.1 The Fashion Industry

Easey (2009), defines fashion as essentially involves change, defined as a succession of short-term trends or fads. According to him, there can be fashions in almost any human activity from medical treatments to popular music. For the purpose of this study, the concept of fashion will focus on garments and related products and services. Fashion is best defined simply as the style or styles of clothing and accessories worn at any given time by groups of people. This indicate that, the fashion industry goes beyond the design, manufacturing, distribution, marketing, retailing, advertising, and promotion of all types of apparel (men's, women's, and children's) from the most rarefied and expensive clothing line and designer fashions to ordinary everyday clothing.

Sometimes the broader term “fashion industries” is used to refer to myriad industries and services that employ millions of people internationally. Amankwah, Baidoe & Chichi (2014) defined fashion industry as a market where the material production of garment meets the immaterial production of beliefs and signs as to what clothes look good at a given time. The definition highlights two key elements linked to fashion: mass adaptation and constant change, which is in line with the current study which seeks to determine the effect of remodelling and renovating of used clothing on the Ghanaian economy.

Löschek (2009), defines fashion as an “autopoiesis” system, which literally means self-production or self-creation, and those systems must arrive consistently in new forms and contents. Consequently, fashion needs innovation in order to continue. Naturally, this capacity of continuance is guaranteed by the design of fashion products in the industry (Löschek, 2009). But all of the stages are liable to be improved by innovations in accordance with the environmental factors.

UNCHAD (2010 p. 10) notes that, while fostering social inclusion, cultural diversity and human growth, the creative economy "can promote income generation, job creation and export earnings." The global importance of the creative industry, which is estimated at seven percent of the world's gross domestic product (GDP), is perhaps due to the development potential of the fashion industry. Tungate (2008), considers fashion as a source of identity as it is socially recognized as a sign of self-recognition. The identity of fashion carries intangible value which is inculcated in a social and cultural realm.

The global economy over recent years has performed strongly which is attributed to the rising investments by fashion industry players. According to the report, Sixty-eight percent of companies' cost bases have risen over the past five years, while only 22 percent have seen a decrease (The State of Fashion, 2019).

2.2.2 The Concept of Sustainability in the Fashion Industry

The UN says that by 2050 the equivalent of almost three planets could be required to provide the natural resources needed to sustain current lifestyles given the growth in global population (UN Goal 12). For this reason, there is the need for the fashion industry to begin thinking about sustainability. According to BSR report (2012), many brands are establishing their own sustainability commitments and strategies, as well as on an industry-wide scale with initiatives such as the Sustainable Apparel Coalition or the Natural Resources Defense Council's Clean by Design campaign as a result of the intensifying criticism faced by the fashion industry about its environmental footprint.

More recently, sustainability leaders in the fashion industry have begun moving beyond their initial reactive response toward proactively addressing environmental concerns at the beginning of the value chain when garments are designed (Wu & Li, 2019; Gazzola, Pavione, Pezzetti & Grechi, 2020). The BSR report (2012) further stressed that, several brands have developed or are in the process of developing indices that will help their designers and product development teams choose materials based on environmental impacts throughout the clothing life cycle because sustainable design in fashion has so far been largely focused on materials selection.

Sustainability has gained increased popularity in the business world and has become basically a driving trend. The reason being that, people are now aware of how those issues will affect the future of the globe, economies and societies, for example, human rights, conditions in clothing factories, environmental challenges and others (Härtsiä, 2017). According to a research carried out by Boston Consulting Group (BCG) and Global Fashion Agenda for the Copenhagen Fashion Summit in 2017, the industry has a weak sustainability system. It developed a scoring system to measure the sustainability of the sector and gave the industry a score of 32 out of 100 saying "the industry is not yet where it could and should be" (BCG report 2017 p. 2). The very reason this study is being undertaken to reform fashion's sustainable future through remodelling and renovation clothes in the Kumasi Metropolis.

Wiese (2015) posits that, the purpose of sustainability is basically to protect, sustain and enhance natural and human resources in order to ensure the future of humankind and nature. Sustainability has been categorized into three different dimensions namely; environmental, economic and social. The dimensions mentioned need to be in balance in order to achieve the purpose of sustainability fully. Adams (2016) argues that, economic sustainability cannot be achieved unless environmental and social sustainability has been achieved.

Adams (2016) seems to agree with Portney (2015) who postulates that, sustainability is not only about environmental protection, but it is also about making sure that human population presently and the future unborn is able to maintain their current standard of living and economic growth without violating health of people, animals and nature. The researcher would like to explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

Despite the fact that sustainability has been a major concern of fashion industries lately, studies shows that fashion industries, sustainability potential has not been utilized fully (Kerr & Landry, 2017). What happens to the clothes after the consumers do not use them anymore? They refer to such clothes as "End-of-use phase". According to them, End-of-use phase means the end of the product life cycle which creates a lot of waste. Tan (2016) realized that, some consumers do recycle or reuse their clothing by selling them at second-hand shop or giving them to charity but the reality is that, a huge part of clothes become pure waste. The very problem that instigated the current study to establish different methods for remodelling and renovating used clothes in some fashion houses in the Kumasi Metropolis.

Hansen et al (2009) opine that Sustainability-Oriented Innovation (SOI) is the commercial introduction of a unique and enhanced product or service which is based on identifiable (qualitative or quantitative) comparative analysis leading to environmental, social as well as economic benefits over the previous version's physical life-cycle. Kloeppfer (2008) ensures that evaluation of eco-impact physical life-cycle and life-cycle assessment is done holistically by assessing impacts in all phases of the life-cycle from resource extraction to end-of-life. Dealing with goods in a different way is a must in order to preserve environmental sustainability and economic value. This calls for a shift in the manner in which goods at the end of a life cycle are designed, manufactured, marketed, used and handled. Essentially this study explores the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

2.2.3 Concept of Remodelling

According to the Ellen Macarthur Foundation report (EMF, 2017), the textiles system operates in a linear way with large amounts of non-renewable resources extracted to produce clothes 'that are often used for only a short time, after which the materials are mostly sent to landfill or incinerated. It calculated that more than $500 billion of value is lost every year due to clothing underutilization and the lack of recycling. In the UK, WRAP (2017) estimates that £140 million worth of clothing goes to landfill every year.

One of the most effective means of reducing garment environmental footprint is increasing their lifetimes. Extending the life of clothing by an extra nine months could reduce carbon, waste and water footprints by around 20–30% each. Academics at the Centre for Sustainable Fashion at the London College of Fashion argue that carbon emissions and demand for water can be reduced through developing clothing maintenance skills, enhancing an appreciation of material qualities, and a 'habit of mind' that prefers existing items to new ones which then acts to slow cycles and volumes of consumption.

Remodelling and renovation are done by changing the style of the garments or new garment is made from the older one. This is normally done when the garment has gone out of fashion and has become out dated.

This means creating something new out of the old/ used clothes that someone else has thrown away, remodelling and renovating to become an entirely new product. Since these are not ordinary clothes, every item will incorporate a dose of creativity and added personality, so that no product will be the same as another. The activity above is described by many researchers as upcycling which is defined as the reuse of discarded

items in order to create a product of higher value than the original (Ali, Khairuddin & Abidin, 2013; Sung, 2015; Yu & Lee, 2019). This simply means that a dress pieced together from deconstructed store and remodel or renovate into current fashions. These dresses may be designed by a designer, use unique combination of secondhand textiles, and may be sold to consumers at comparable or even higher prices than other dresses.

McDonough and Braungart (2013) developed a conceptual framework of how remodelling and renovation can be done in three simple steps. As illustrated in a wheel or circle that represent the process of remodelling and renovation of textile products. They are,

- First is to collect,
- Second is to reprocess, and
- Third is to resell to consumers.

Designers and producers may take once-sold goods and reprocess them into something much more desirable, so that retailers would resell them at a higher price for the second time. This method allows remodelling and renovation to add value and profit. It is worth remembering that, in order for the entire cause of saving money to have an effect on the economy, goods that have been remodeled and renewed into new products need to be bought.

McDonough and Braungart (2013), the proponents of descriptive recycling, defined upcycling broadly as an activity that utilizes the limited utility of the discarded products to develop a new product (or material) of comparatively better value. In this report, by redesigning them into current fashion, the concept of upcycling that is substituted by remodelling refers to the process of reusing clothing providing pre- or post-consumer textiles.

Used textiles were used as insulation or rags for both domestic and industrial use until the advent of remodelling, but textile waste has the ability to be of better benefit than its original form if it is remodeled (Myers, 2014). The textiles used are often rescued from the landfill or incinerator and are useful to society again. Re-use comes under the tutelage of sustainable fashion and goods, according to Minney (2011). Ethical fashion encompasses other environmental values, including Fair Trade, organic, recycling (which includes upcycling), among others, she argues. The current study draws inspiration from the above concepts since it has the task to develop a framework for remodelling of used clothing in Kumasi Metropolis.

2.2.4 Methods for Remodelling Used Clothes

In both classroom environments (LaBat & Sokolowski, 1999; Watkins, 1988) and professional work environments in the apparel industry, researchers have studied the remodelling and restoration phase of used clothing design for more than 30 years (Pitimaneeyakul, LaBat & DeLong, 2004). In general, the remodelling and redesign of the used clothing design process can be simplified to three main stages, including issue description, innovative discovery and execution, despite the fact that there are variations in the concept of design process steps and sub-steps (LaBat & Sokolowski, 1999).

According to Regan et al. (1998), the process of remodelling and renovating used clothing design has many parallels with the process of engineering design, Lewis and Samuel (1989) identified the phases in the engineering design process including problem detection, problem description, problem discovery, quest for alternatives, assessment and decision-making, solution specification, and commune. Under the

seven engineering design phases, the remodelling and renovation of used clothing designs is categorized (Regan et al., 1998). Second, it is important to explain the measures that are important in the process of designing. Understanding the sequence of the procedure is important as it will build consensus between customers and re-designers about what is planned at each point and minimize confusion or anxiety with regard to the final outcome.

In a number of disciplines, including engineering design, industrial/product design, environmental design, and clothing design, LaBat and Sokolowski (1999) performed a meta-analysis on design procedures. They found that for all forms of design, similar steps were used and outlined the design process in three key phases: 1) problem definition and study, 2) innovative exploration, and 3) implementation (LaBat & Sokolowski, 1999, p10).

- Step 1, research and problem definition, can be divided into three sub-steps: initial definition of the problem, research, and definition of the working problem. First, in their own words, the customer must articulate the design dilemma. Designers then perform analysis to consider both the market's desires and user's as a whole. Finally, the designer(s) and customer(s) discuss and settle on a description of a working issue, setting parameters that will be going to be included later to measure the performance of the design (LaBat & Sokolowski, 1999).
- Step 2, four major sub-steps are involved in this phase, imaginative exploration. First, without worrying about practical constraints, preliminary ideas should be produced. The purpose is to brainstorm as many ideas as possible that are diverse. Secondly, to win out reformulate ideas or non-functional ideas into

executable design proposals, consumer and development restrictions are reintroduced. Third, designs mesh into something practical the design requirements and limitations. Finally, depending on the requirements, designs are reviewed by the customer and designer. The best will pass to implementation, or if none of the prototypes are appropriate, the process will start over (LaBat & Sokolowski, 1999).

- Step 3, implementation, is the process in which the object is created. Cost and time to manufacture are now measured correctly, manufacturing methods are chosen, and sales potential is addressed. Additional changes can be made to maximize performance and/or reduce costs as the production process is under way. In certain cases, it is difficult to apply the design solution instantly, so a timetable for implementation is set (LaBat & Sokolowski, 1999). Customers or customers do not need to be involved at every point in the process designing defined by LaBat and Sokolowski (1999), since designers are mostly paid for their technical expertise artistic abilities, and time required to solve the issue. In this model, the position of the client is limited to communication of needs, criticisms, approvals, and execution. This research aims to turn the customer from a customer into an involved co-designer. In particular, because majority of the clients are not qualified designers and may not feel relaxed or secure in acting as co-designers, how do we make this leap?

The aim of the present research, similar to Ulrich et al. (2003), is to provide customers with a customized, local familiarity with a designer or team of designers by in-person interaction. Involving customers in the design process gives them the ultimate power to make choices, freeing their imaginations and ensuring a personalized outcome

(Fletcher, 2008). In the ecological design discourse, this term is often referred to as participatory design. Participatory design (PD) is characterized as the active participation of lay people in decision-making, resulting in user satisfaction, social well-being and community engagement (Howard, 2004). In LaBat and Sokolowski's (1999) method described above, the client is both a customer and a designer. Consumers share roles and are interested in the design, prototyping, testing and refining of designs with experienced designers (Howard, 2004).

In two key respects, this collective redesign process leads to ecological sustainability. First, the redesign of recycled apparel prohibits dumping, which is also achieved with no regard to environmental consequences (Raboldt et al., 2010). Second, the co-design process preserves local manufacturing and distribution, reducing high shipping costs and the depletion of non-renewable fossil fuel resources (Fletcher, 2008). After customers undergo collective redesign, a likely third outcome may be increased perception of redesign possibilities and a new view of apparel in general. The current study seeks to establish different methods for remodelling and renovating used clothes in one of the fashion houses in the Kumasi Metropolis.

A recent study by the Ellen MacArthur Foundation (EMF 2017) highlights that when designing or scaling garment collection solutions, ease, understanding, confidence, and incentives are the key variables that should be considered. A consistent communication message is required to build knowledge and confidence, which explains that both reusable and non-reusable textiles are approved and that they will be refurbished and renovated to the extent possible (Watson et al. 2018).

In addition, for all forms of collection operations, containers, and performers, Watson et al. (2018) propose a common brand to minimize market uncertainty and improve coordination with regard to where to place used textiles. Weber et al. (2017) further argued that when discarding their discarded clothing, fashion buyers are more likely to engage in alternative disposal methods such as reselling, trading, and taking back, which identifies a need to design collection strategies accordingly Finally, previous research indicates that a financial incentive is always required to increase end-consumer collection of used goods (Geyer & Jackson 2004; Guide & Wassenhove 2009), which is still valid today. The new trends in looking at current disposal solutions are different reselling sites (i.e., both online and physical) and in-store take-back services that give economic benefits to customers for their products.

2.2.5 Effect of Remodelling Used Clothes on Economic Activities

The fashion industry has played a major role in the growth of the economy of Ghana (Asante, 2016). In the production of Batik means "Wax Written" which became popular in the late 1970s and Tie-Dye styles, the local people also work. Batik's output is appealing, and clients such as Batik artists often use designs and photographs that are communicative in nature. Batik's manufacturing is labor intensive, so it provides a lot of people with jobs, mainly women. While the attention is paid to recycling, which ensures that at least part of the products and a fraction of the value are recovered, the losses are hardly reduced.

Hansen, et al. (2009) argue that social and environmental and economic dimensions are inculcated by remodelling and sustainability orientation, which poses new challenges for small and medium-sized enterprises (SMEs), particularly in the fashion industry. In

an age of degradation of non-renewable natural resources, the introduction of remodelling, based on the principles of sustainable development, has great potential (Chen, 2008). Zajkowska (2015) claims that the majority of companies surveyed in Poland claim that the implementation of business remodelling affects the company's domestic and foreign competitiveness. Could this be the case in Ghana? The study would like to investigate the effect of remodelling of used clothing on economic activities in the Kumasi metropolis.

African Development Bank (2011) reported that Ghana had 46% middle-class population and according to the report more and more people had discretionary income to buy luxury goods, including fashion. Ghana is beginning to experience some 'fashion renaissance' involving large retailers that sell garments in bulk, niche products and brands appealing to customers with different tastes. There is also Couture fashion ready in the local market with relative ease at competitive prices. Although local producers are yet to tap fully into the 'Fashion Renaissance', there is no doubt the customer base is expanding, creating opportunities for niche products as more and more people have discretionary income and are showing interest in fashion.

Hawley (2008) found out that the fashion remodelling industry is a beneficial industry working diligently to keep waste out of the environment. According to her, nothing in the fashion industry should be a waste because textiles are nearly 100% recyclable. From the above revelation, there is no doubt, fashion remodelling will have a positive impact on many entities and contributes significantly to the economy, environment as well as the social life of the people in the Kumasi metropolis. A question this study seeks to answer. Baruque-Ramos, et al.(2017) postulate that the key socio-economic

and environmental benefits of fashion remodelling relate to the training of labour and local income generation, the understanding of consumption patterns by raw material, the population, the mitigation of environmental impacts and conservation of natural resources. The study intends to confirm or otherwise of these benefits stated above in the Kumasi metropolis.

2.3 Theoretical Framework

2.3.1 Porter's Value Chain Theory and Life Cycle Framework

The Value Chain analysis was created by Michael Porter, which distinguishes the corporations' operations in order to conduct businesses. Technologically and physically different, they include (Porter, 1985). The key tasks are divided into three: the physical development of the product or service, its distribution and promotion to the customer, and its post-sale support. In every step of these value chain operations, impacts on the environment will occur. But according to him, in the field of fashion, support after sale is relatively redundant since sustain after sale is not regarded as it is in the industry of electronic or appliances devices.

As a consequence, he established the life cycle as an acceptable structure for the fashion industry. Porter's (1985) concept is used in the fashion industry as a basis for developing a model of sustainability and innovation evaluation. Sustainability effects from a life-cycle aspect in production-based systems are especially studied in the literature. The life cycle relates to a commodity's "physical life cycle" which differs from the life cycle of the market (Hansen, et al. 2009). The concept of the life cycle discussed here refers to input-output exchange processes between the environment and the entire set of processes involving any product's entire lifetime, meaning that the product is assessed

according to its energy, resource and emission flows over its lifetime (Vezzoli & Manzini, 2008)

Innovations are important for altering or mitigating current processes in order to reduce the environmental effects of business activities. “It becomes important to accept the effects of goods and innovations in the various phases of their physical life cycles (Klöpffer, 2008; Saling et al., 2002, as cited in Hansen, et al., 2009, p. 713). The life cycle thus covers all phases of the product, beginning with the resources and ending with the treatment of the end-of-life (Vezzoli & Manzini, 2008).

The above theory is linked to the current study since under normal circumstances, the life cycle of clothing ends up as a waste in the environment. With remodelling and renovation as a sustainability technique, fashion houses can reuse used clothes to make new ones. Meaning that after disposal, the used clothes become raw materials for another new clothes for the consumption of the consumers and friendly to the environment as well. The study seeks to explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

2.3.2 Theory of planned behavior (TPB) and theory of reasoned action (T)

Citing Ajzen and Fishbein (1980) who proposed the theory of reasoned action (TRA) and the theory of expected actions (TPB), Rossmann (2011) postulates that the theories were meant to better explain consumer behavior. According to Rossmann (2011), as well as considering behaviors in response to the actions in focus, the TRA looks at the subjective expectations that affect relevant individuals or groups of individuals.

Psychologist refers to behaviors that typically characterize an object's relatively stable assessments and divide them into cognitive, affective, and conative elements. Rossmann (2011) describes the cognitive component as an object's appearance, referring to the affective component as responsible for an emotional response to a feeling or an object, whereas the action is referred to by the conative component. He simplified them as a positive or negative behavioral appraisal or, better yet, as a cognitive, affective or conative behavioral response.

The subjective standard, however, defines the individual interpretation of the social desire to conduct or refrain from a certain behavior (Rossmann, 2011). Normally, behaviors and subjective norms are two sides of the same coin. The explanation is that people prefer to purchase remodelling apparel if they believe that the action is good and that it is accepted by their environment. If the above statement holds, it is likely that a person who intends to buy reuse clothing (behavioral intention) would certainly purchase remodel clothing (behavior).

The purpose is a deliberate objective of people to act in a certain way. For this reason, Ajzen and Fishbein (1980) as cited in Rossmann (2011) notes that the object of the specific behavior is to calculate the probability that a person wants to participate in a certain behavior. Rossmann (2011) again posits that the theory of planned behavior (TPB) extends the TRA by another component known as perceived behavioral control. According him, the perceived behavioral control has an indirect influence on one's behavior. Citing Ajzen and Fishbein (1980), Rossmann (2011) explains an individual's assumption of the difficulty of selecting a particular behavioral alternative. The individual's confidence in the likelihood of viability may be linked to a social group's

previous positive experiences or data. According to Ajzen and Fishbein (1980), how much power someone has to do something consistently is further clarified by perceived behavioral regulation.

2.3.3 Stimulus-Organism-Reaction (S-O-R) model

It is imperative for a producer of any product to be concern with how consumers are going to accept and use the product. For this reason, it is crucial to know how purchasing decisions are made by customers. Therefore, the Stimulus-Organism-Reaction (S-O-R) model according to, Chang et al. (2011) states that the actual purchase decision process, such as changes in preferences or behaviors, takes place internally, which cannot be examined and thus influences the mode of action of a stimulus.

These stimuli lead to multiple reactions (responses) that fulfill consumers' purpose-oriented needs and are affected by external influences, such as cognitive and triggering processes that go well beyond mere shopping. Chang et al., (2011) asserts that a particular stimulus, an advertising message or a change in price influences an organism and has a direct impact on the decision to purchase. The authors note that the background of the consumer, which includes the social stratum, culture etc. affects the purchasing behavior of the consumer. For instance, when buying clothing, taste and tastes vary.

Members of a particular cultural group differ significantly from another even if they are in the same locality. Again, peer groups, such as friends and family as well as religious groups have a direct effect on the customer. From the above, Chang et al. (2011) observe that the behavior of an individual is always situational. For this reason,

they noticed that it had an influence on whether the buyer was under pressure to purchase the product or whether the product was intended to fulfill a specific purpose, such as a gift.

2.3.4 Eco-Fashion and Green Fashion

Thomas (2008) describes the two terms above as something that satisfies the needs of the present without depriving future generations of the chance to satisfy their own requirements. Environmentally friendly clothing has been given many terms as ethical fashion, eco-fashion, green fashion or sustainable fashion. Therefore, sustainability is described by Fletcher (2008) as the integration of human well-being and natural dignity. Sustainable textiles are therefore interpreted in this study to mean garments that can be reused or remodeled that are heavily linked to climate change, emissions, and environmental issues.

Thomas (2008) notes that there is a marginal difference between green fashion and eco-fashion. He asserts that the term eco-fashion emerged in the 1990s and refers to patterns and trends that have little or no effect on the environment. Cervellon and Hertjh (2010) claim that, while they have different definitions, eco-fashion is still linked to words such as organic, ethical, fair trade and green, which are used interchangeably. Therefore, eco-fashion refers to all clothes made from eco-friendly fabrics. Simply put, eco-friendly implies that the ecosystem is affected only minimally or not at best.

However, Mintel (2009) pointed to the fact that organic eco-fashion clothing is made from natural fabrics that can be quickly recycled and remodeled. The term green fashion is also described by Henninger, Alevizou and Oates (2016) as the use of renewable materials and equal conditions for production. Henninger et al. (2016) noted that green

fashion is manufactured according to sustainability criteria, because organic cotton, silk, and hemp are primarily used, a large part of the costs are spent on fabrics as well as in production.

Cervellon and Carey (2011) indicated that if the consumer's profit is to be maximized, then value must be put on the well-being and welfare of society as well as the environment, then one speaks of ethical fashion and the two words can be used interchangeably. The aim is to treat employees fair and to mitigate the environmental pollution. The current study links eco and green fashion to remodelling of used clothes.

2.3.5 Circular economy and linear economy

According to Mathews and Tan (2011), the linear economy is a continuous growth in the conventional linear way, beginning with resources taken from nature at one end and continuing to generate waste disposed of in nature at the other end by production processes. This way of organizing all the time is expensive for both securing new resources and wasting resources in the form of waste. It is inefficient economically and ecologically.

Park and Chertow (2014) as cited in Ness (2008) argue that the negative effects caused by the model of 'take, create and dispose' are a threat to the stability of economies and the integrity of natural environments that are important to the survival of humanity. A linear take-make-dispose mechanism that relies on continuous material supply determines the current economy. This scheme is known for its intensive consumption of energy.

In order to prolong the life of a fabric, the Ellen MacArthur Foundation (EMF) (2013) created and adopted two concepts, namely the power of the inner cycle and the power to circle longer. According to the EMF the concepts are aimed at growing material efficiency and, in other words, remodelling clothing, acting as a source of value generated within a circular economy. The influence of the inner circle explains the idea within the supply chain of minimizing material use.

According to this scheme, in order to be profitable, all costs associated with textile treatment operations, such as collection and processing, must be lower compared to the linear alternative, as the period must be as tight as possible in order to save the materials, resources, labor and capital necessary for the investment. As the influence of the inner circle is applied, environmental effects such as pollution, water and greenhouse gases are diminished. On the other hand, as the concept of increasing the amount of times a material or commodity is reused, remanufactured or recycled, the power of circling longer is explained by EMF (2013).

2.3.6 Take back models

Morana and Seuring (2007) realized that the waste at the end of textiles is not necessarily managed by the manufacturer unlike other industries, such as the car industry until in the 1960s where in exchange for the return of old clothing, fashion companies in the USA began collecting worn clothes. According to Packard (1960) cited in Morana and Seuring (2007) notes that a discount on new pieces was offered by fashion companies. Hvass (2014) alluded that lately there are some factories such as Marks and Spencer, Houdini Filippa, Patagonia, Aplace and Boomerang, have recently provided various in-store take-back alternatives for reuse and recycle garments.

Hvass found that by prolonging the product life of clothing through reuse options and second-hand retail outlets, this growing practice is correlated with environmental rather than social concerns. In exchange for returned garments, can the fashion houses in Kumasi remodel used clothes by offering customers a discount voucher that they can use for the next purchase? This research aims to define fashion houses' sustainability policies.

The creation of reselling sites for second hand clothing is a further alternative to extending the use of clothing. Their value is put back into the loop by reselling the goods. The American fashion brand Eileen Fisher, for example, started the Green Initiative of Eileen Fisher, which collects clothes and offers their customers upcycling workshops. The Swedish firm Boomerang, which upcycles unwanted textiles into new Boomerang goods, is another example (Hvass, 2014).

All of the above is important because the fashion industry is not only known for its negativity in the development and distribution operations, but also at the use and disposal stage of apparel products, according to the EMF (2013). This makes remodelling of clothes a better option in dealing with such a difficulty, an objective this study seeks to achieve.

2.4 Empirical Review

Significant quantities of surplus and second-hand garments are distributed to Africa from the developing world but also from manufacturing countries, such as China, to be sold at affordable rates in local markets. Ghana is an African nation with a very well-developed trade in excess fashion products, where local people buy and wear a wide variety of clothes, accessories and shoes. Commonly referred to as the Bend Down

Boutique, customers buy clothing items spread out on the floor in markets around the country (Abimbola, 2015). It is worthy to note that, most of these products ends up as waste adding up to the woes of the environment. This study seeks to turn around the situation by developing a framework for remodelling and renovating of used clothing in Ghana.

A study by Statistics Sweden and the Swedish Environmental Protection Agency (Naturvårdsverket) found that over half of the clothing and other textiles consumed in Sweden every year is incinerated (Ungerth & Carlsson, 2011; Palm et al., 2014). In a more recent study commissioned by the Swedish EPA one in every four persons report that they throw used clothes in the waste bin (Naturvårdsverket, 2018). Largely explained by that the same users report that they do not know what to do with unwanted clothes. There is a similar situation in Ghana but a more serious in the case of Ghana is the inefficient in waste management. This makes it imperative for a study to be undertaken to establish different methods for remodelling used clothes some fashion houses in the Kumasi Metropolis.

Kent and John-James (2018) applied a 'knowing in motion' methodology designed by some third-year fashion design students at Accra Technical University for the research project (ATU). The notion of upcycling and the design parameters is verified by the initial briefing to design classes. In the Accra market, each group established a design theme and then made a collection of clothes and accessories and returned to the university to cut and re-create clothes and accessories.

The project resulted in presentations of student-modelled finished clothes. It tackled the disposal process of the textile sustainability circular economy model by presenting new awareness of how waste clothing can be acquired and creatively re-imagined into accessories and new clothing, readily available in the market of a developing world. This study was not commercialized but the current study would like to use already existing fashion houses in the Kumasi metropolis for remodelling used clothes for commercial purposes.

Pettersen (2013) argues that in a more sustainable way, design will contribute to distinct consumer behaviour. She incorporated many theories, including system innovation theory practice theory, to explain the drifts of operations and the potential for change. Hur, Beverley and Cassidy (2013) came out with a co-design toolkit that facilitates positive behavior as far as sustainable fashion design and consumption is concern. Six designs and patterns with many examples are included in their toolkit, they are;

- Choice: That is the preferred use of production tools and methods of use (wear, care, dispose).
- Optimization: This is "cradle-to-cradle" thinking, zero-waste and imaginative solutions such as services for trading and sharing.
- Empowerment: Offer solutions, such as personalization, that satisfy social and psychological needs.
- Persuasion: Find ways to encourage individuals, such as offering data or incentives.
- Interaction: styles that propel interactions between consumer and product, such as feedback on actions and sensory effects.
- Global conversation: one that encourages changes through social learning, communities, open-source usage, innovative and lifestyles.

More reason why the current study would like to establish different methods for remodelling used clothes in selected fashion houses in the Kumasi Metropolis.

Again, Niinimäki and Hassi (2011) have come out with design techniques that can be used to facilitate sustainable textile use. Increasing product life span through higher quality and letting customers know about the planned lifespan, using emotional connection to customization, increase product satisfaction, as well as re-creation are strategies related to extending the life span of apparel. They concluded that customers were most persuaded of the technologies that could maximize performance through a combination of design strategies.

A consumer survey in five European countries found that customer consider high quality to be a significant environmental measure because they considered that purchasing less clothes and increasing the period of use by fixing clothes is environmentally preferable steps compared to purchasing eco-labeled clothes or minimizing washing (Austgulen, 2013). Around the same time, research into the lifespans of quick fashion apparel found that most informants felt that low prices justified poorer quality of clothing and shorter lifespans (Collett, Cluver, & Chen, 2013). The rate of clothing consumption is high; our planet's carrying ability, meanwhile, is decreasing.

Most environmental concerns can be related to material use and disposal, according to Ayres (2008), because material inputs become waste outputs and, in particular, the fashion industry has a major effect on the global environment (Battaglia et al., 2014).

The explanation behind this is that consumers are now conscious of human rights, clothing factory conditions, environmental problems and how the future of the world, economies and communities will be impacted by those issues. For the reason above, it is important to explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

On the contrary, Beard (2008) argues that consumer awareness of the impacts of the fashion industry is very low and sustainable fashion is still a niche market rather than a fact of the mass market, and Johansson (2010) adds that people are interested in sustainability but continue to look for quick, cheap fashions. As ethical and environmentally friendly goods are also a little more costly and less affordable in terms of time and comfort, many buyers have preferred the less costly product/fast fashion over the more sustainable one. Secondhand clothing is a conflict-avoidance tactic for customers with low budget purchases, it is an intermediate way to get out of the pressure of poverty and, as a result, SHC has an economic benefit (Han, 2013), but might not be advantageous to the nation as a whole therefore the need to develop a framework for remodelling and renovating of used clothing in Ghana.

It was recorded in Malaysia in 2013 that clothing waste accounts for 4% of total solid waste, which is approximately 2 million kilograms of clothing waste generated daily (Pariatamby & Victor, 2013). A positive relation between buying clothing under ethical issues and clothing disposal actions towards sustainability, according to Lang, Armstrong and Brannon, (2013) will contribute to creating an eco-fashion industry in the future. A few scholars have highlighted the role of the intention-action difference in the buying behavior of eco-fashion clothing (Lang, Armstrong & Brannon, 2013; Cleveland, Kalamas & Laroche, 2012).

The practices of fashion designers in Africa, as Rovine (2010) argues, provide rich insight into the impact of global networks of imagery and products, as well as the continued importance and popularity of indigenous dress styles, often linked to traditional cultures. African clothing styles with the first representing 'indigenous' or 'authentic' African culture, and the other 'Westernization' are often identified as 'traditional' or 'modern'.

Most previous dress traditions of Ugandan ethnic groups have faded away, according to Nakazibwe and Nannyonga-Tamusuza (2010), and are being replaced by 'modern modes of speech that rely on cross-cultural interpretations of local forms, Western fabrics, and ideas from elsewhere in Asia, Middle East and Africa. In selected fashion houses in the Kumasi Metropolis, the study would like to establish different methods for remodelling used clothes.

For its polluting production and waste, and its use of non-renewable resources, the textile industry has long been criticised (D'Souza et al., 2015). Because of mass consumption and the continuous procurement of new clothes, the consumption of Western clothing is considered to be unsustainable (Niinimäki, 2010). The fashion industry is evolving quickly, and what's in style today might not be the same as tomorrow's style (Joy et al., 2012). Businesses have the potential to influence customers (D'Souza et al., 2015).

The study by Niinimaki (2010) indicates that the consumption decisions of fashion consumers about sustainable goods are highly complicated. There is a difference in environmental consciousness and ethical consumption between their attitude and actions. Joy et al., (2012) also finds that their attitudes towards sustainability and their

buying decisions contradict each other. According to Chan and Wong's (2012) research on consumer eco-fashion consumption choices, they found that despite eco-fashion characteristics, they may have a positive effect on the purchase decision of consumers, but because of the price premium level of sustainable goods, such relationship can be weakened.

Clothing take-back services allow clients to deposit discarded products to be recycled or re-sold in the recycling process of the product lifecycle (Balch 2013, Cooper et al 2013). Design for disassembly is a second approach at this point. This requires the development of items that can be withdrawn to restore damaged or worn or parts - a common practice before the establishment of mass production (Gwilt & Rissanen, 2010). Agreeing with the studies above, the current study will adopt and explore a comprehensive sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

Holland and Lam (2014) suggest that such an adaptive strategic model is suitable for the fashion industry, but in the context of global environmental and technological change, achieving sustainable solutions often involves long-term approaches to market resilience. Visionary strategies that prioritize radical goals and creativity may lead to more positive change and greater value for the brand.

In two field experiments with stores undergoing significant remodelling, Dagger and Danaher (2014) explored the contrasts between the impact of remodelling on new and existing customers. Before and after the remodelling for new and current customers, the authors evaluate sales; they also measure the psychological responses of customers in one shop. Their results indicate that sales improved in both cases after the

remodelling campaign, but noted that sales for new customers were substantially higher after the remodelling in the short time than sales for existing customers.

They also reported that higher sales to new customers was largely due to the attraction of more new customers to the redeveloped shop, their higher spending per visit, and their subsequent increased frequency of visits. Sales and economic activity could probably be improved by remodelling. The current study has set this objective to be achieved.

In their post, Laitala, Boks and Klepp (2015) explores the degree to which it is not certain to postpone apparel disposal by enhancing creativity with the intention of reducing negative environmental impacts. The authors used user-centered design approaches in more traditional quantitative market research that offered new insights into design, collecting empirical data on the reasons for the disposal of 620 clothing items from 35 people in 16 Norwegian households. A total of 70 separate reasons for disposal were registered, which were combined into seven main categories.

Their findings concluded with four-level design solutions related to essential disposal reasons, including system design, service design and product design (material and shape), but also show that customer behavior is crucial. Can this current study come out with a suitable design for the remodelling clothes that can be accepted by the consumers? An objective the study seeks to achieve.

Newell (2015), who researched New York State's current textile recycling scheme that conducts textile recovery, reuse and recycling, as well as offering alternatives to landfill disposal. Another aim was to understand whether and how the United States should

become more accountable for the textile waste it produces and reduce its dependency on foreign exports of second-hand clothing and other textile waste. Test questions were addressed and answered via a mixed methodological research design that combined main qualitative and quantitative data with secondary data. Primary data from consumers was obtained using an exploratory consumer survey on textile disposal behaviors and interviews with key informants from urban recycling management, the textile recycling sector, the fashion industry and higher education.

This study identified systemic efficiencies and inefficiencies in textile waste recovery and recycling efforts in order to reduce textile waste in landfills, which can help strengthen diversion efforts and increase both input and output to the system, since the information sought in this study demonstrates the system that brings together different stakeholders who work individually and as a team. Since waste of all kinds is produced locally in communities, the research questions and responses sought to better understand how textiles are recycled within the textile recycling system at local and regional levels.

Laitala et al. (2015) addressed the degree to which clothing disposal can be postponed by improved design, resulting in the reduction of adverse environmental impacts. In more conventional quantitative market research, they have used user-centered design approaches to provide new design perspectives. Empirical data was collected from 35 individuals in 16 Norwegian households on the reasons for the disposal of 620 pieces of clothing. A total of 70 different reasons for disposal, which were combined into seven main categories, were recorded.

While there were less common functional, situational, taste, and fashion-based variables, improvements in clothing as well as size and fit issues dominated. They concluded that four-level design strategies, including system design, service design and product design (material and shape), lead to important disposal reasons, but also demonstrate that customer behavior is crucial. Furthermore, they claimed that the combination of results obtained with different qualitative and quantitative approaches proved to be acceptable for providing rich knowledge that can be used to advance design research.

Preuit (2016) examined the over consumptive behaviors in society often and its cause on the environmental impact. The goal of this study was to understand whether exposure to slow fashion education regarding its environmental benefits would affect the attitude of consumers and purchasing intentions towards slow fashion items. With the extra variables of environmental values, shopping values, and experience of slow fashion, the analysis used the Theory of Expected Actions. There were three phases of the methodology: a focus group, a pre-educational survey and an educational module to assess pre- and post-educational disparities, and a post-educational survey, which culminated in 163 accessible answers for further study.

The results showed that the educational module improved the awareness of slow fashion and attitudes towards slow fashion by young adult buyers, but the buying intention did not change. Among the additional variables of the Expected Behavior Theory, the findings showed that only environmental values had a major effect on the attitudes and buying intentions of young adult consumers towards slow fashion and that subjective awareness was the best predictor of the perceived behavioral regulation of young adult consumers.

The results showed that the used clothing economy puts the links between the market, materiality and morality into one picture, exposing complex links as clothing gifts are commodified by charities in the Global North, sold on the global market, and become a resource in the Global South for improving local livelihoods. The study indicated that for this reason, contemporary theoretical concerns, marketing, economization and the convergence of economic value and cultural values have much to offer in the secondhand clothing economy.

In order to provide a conceptual framework for collaborative fashion consumption (CFC) as a potential path towards more sustainable clothing, Iran and Schrader (2017) researched sustainable clothing. They presented a formal and discussed concept, a typology and potential environmental effects of CFC. For future empirical studies on CFC as an aspect of more sustainable consumption, this provides a strong conceptual foundation.

Their paper was written largely on the basis of a study of more recent collaborative consumption literature, as well as older articles on similar topics such as eco-efficient services and sustainable service structures. To establish CFC typology and the structure of environmental effects, both deductive and inductive approaches were used to pass existing constructs to this particular field and question them by assigning realistic examples. The results show that the concept and typology of CFCs and the framework for the evaluation of their environmental effects are the key contributions to this paper. Transformable apparel offers two or more functional and/or alternate aesthetic forms by various misleading methods, which are considered a sustainable solution to reducing unnecessary consumption of clothing in the fashion industry. The research aims to identify the influence of knowledge of sustainable clothing, environmental standards,

and personal values on the intention of consumers to purchase transformable apparel products. As the basis for the conceptual framework, the theory of rational action (TRA) was applied, which considered attitude and social factors to be crucial factors that affect the intent.

Via an online survey, data were collected from 306 female college students in the United States. Structural equation modeling (SEM) evaluated the proposed hypotheses (SEM). The results confirmed the positive impacts of the tendency for creative choice, environmental values, knowledge of environmental apparel, and attitude on the intention of female college students to buy transformable apparel products. In addition, practical and theoretical effects based on the results were also discussed.

Bick, Halsey and Ekenga (2018) investigated quick fashion as cheap and readily available garments that have altered the way people purchase and dispose of clothes. The study is done against the background that manufacturers sell vast amounts of clothing at low prices, making quick fashion a dominant business model, causing clothing consumption to skyrocket. However, according to them, the threats to human and environmental health associated with cheap clothing are concealed across the lifecycle of each garment, from the growth of water-intensive cotton, to the release of untreated dyes into local water supplies, to low wages for workers and poor working conditions; the environmental and social costs of textile production are widespread. They argue that negative externalities have produced a global environmental justice problem at each stage of the rapid fashion development and supply chain. They asserted that quick fashion provides an opportunity for customers to purchase more clothes for less, but at the same time poses environmental health risks to those living in or working near textile manufacturing facilities.

According to them, the troubling trend is that increased rapid fashion consumption trends in landfills and uncontrolled environments have also created millions of tons of textile waste, as most of this waste ends up in second-hand clothing markets, especially in low- and middle-income countries (LMICs). The worse of it is that these LMICs also lack the requisite logistics and expertise to establish and implement environmental and occupational protections to protect human health. The study concluded with a debate on the role of industry, policymakers, consumers, and scientists in promoting fair promotion of sustainable production and ethical consumption. The current study seeks to find out whether it is possible to use remodelling of used clothing to mitigate the problem.

Sandin and Peters (2018) reviewed forty-one papers on the environmental impact of textile reuse and recycling and they provided a summary of the current knowledge as well as pointing out areas for further research. Their findings revealed that 85% of the papers examined were about recycling, 41% were about reuse, and 27% were about reuse and recycling. Fiber recycling is the most studied, consisting of 57%, polymer/oligomer recycling followed by 37%, 29% monomer recycling and fabric recycling (14 %). Cotton (76%) as well as polyester (63%) are the most studied fabrics, they state.

The reviewed publications provide clear evidence for arguments that when textiles are reused and recycled compared to incineration and landfilling, the environmental effect is significantly reduced, and reuse is more effective than recycling between the two. However, the analysis also revealed circumstances in which such environmental effects do not benefit from reuse and recycling, such as benefits that do not arise in cases with low replacement rates or a relatively clean manufacturing process.

Induced consumer transport for reuse can also have an environmental effect that exceeds the benefits of avoided manufacturing, unless the phase of usage is sufficiently extended. In terms of important methodological assumptions, the authors most often assume that textiles sent for recycling are waste free from environmental burdens and that reused products and products made from recycled fabrics replace those made from virgin fibers. They also found that a research gap exists in the following areas, such as cascade systems, in order to explore the potential of combining various reuse and recycling routes.

Paras (2018) analyzed the 'reuse' market of apparel to establish a reverse value chain model focused on reuse for the apparel industry by building a conceptual structure by considering reverse value chain processes such as collection, sorting and reprocessing. To study the reuse-based reverse value chain, the analysis used a mixing process (qualitative and quantitative) approach. Again, to investigate the current sustainable practices of clothing reuse, an exploratory approach focused on several case studies was adopted. By formulating a mathematical model using an analytical hierarchy method such as the Genetic algorithm and the Markov principle for analysis, they further improved the empirical model of reuse-based reverse value chain. Their findings revealed that an efficient resource recovery is environmentally sustainable and economical.

Yalcin-Enis et al. (2019) research focused on gaining detailed insight into clothing disposal behaviors with the goal of assessing the history to clothing disposal behaviors of young U.S. costumers using an expanded version of the Principle of Reasoned Action and comparing the actual disposal behaviors of young consumers in relation to quick fashion and non-quick fashion clothing. Four structural equation models were created

to analyze backgrounds (i.e., clothing disposal motivation, environmental apparel knowledge, apparel disposal attitude, clothing disposal subjective norm, and clothing disposal intention) to the most commonly cited apparel disposal behaviors: donate, resell, discard, and reuse. In order to explore the disparities in disposal rates, disposal methods, and explanations for disposal used by customers for quick fashion and non-quick fashion clothing, their results used cross- tabulation and paired t-tests with chi-square statistics. Results ranged from model to model for the conceptual system.

The result revealed that the reselling model showed no substantial association between awareness of environmental apparel and motivation for apparel disposal. They further found out that, no significant connection between the attitude of apparel disposal and the purpose of clothing disposal in the reselling model, but all associations between antecedents were found to be significant in the donation model. Except for the link between the subjective standard of apparel disposal and the purpose of apparel disposal, the majority of the previous relationships were found to be important in the models of reuse and discard.

Again, the results show that respondents disposed of fast fashion apparel at a faster pace overall than non-fast fashion apparel. Their findings fail to establish that, remodelling of the discard clothes will attract consumers to solve the environmental problems, this is one of the objectives of the current study.

Gazzola et al. (2020) explored the major shifts in a dynamic environment in which apparel companies' function, coupled with a fundamental transformation in final consumer lifestyles, which translated into the need to redefine business models. The goal of the study was to explore how the concepts of sustainability and circular

economy influence the understanding of the fashion industry among the new generations of consumers. They mapped emerging trends in the fashion industry and examined the position of sustainability on the demand and supply side by using a survey conducted in collaboration with Insubria University through an anonymous questionnaire and using both a descriptive and quantitative point of view in order to verify the various perceptions of sustainable fashion and circular economics focusing mainly on the so-called Generation Z.

The findings define the actions of students with regard to emerging trends in fashion, with particular attention to sustainability issues and the application of concepts of circular economy that have proven to be consistent with the theoretical framework and confirm the importance of sustainability issues in the fashion industry today in driving Generation Z demand by taking a gender perspective into account. In addition, the circular economy is studied in a descriptive manner in order to explain the importance of the various dimensions to the whole sample of respondents.

This research illustrates that many sustainable clothing design techniques exist. However, there is insufficient research on their relationship with customers' clothing lifespans and clothing use and disposal patterns, and no empirical evidence has been discovered connecting all these aspects. Therefore, this research aims to identify empirical factors for the disposal of clothing that affect lifespans and to identify design strategies that could improve the active use time of clothing and delay the disposal process.

2.5 The Ghanaian Fashion Industry

A vibrant fashion scene, led by a new generation of young fashion designers, is emerging in Africa (Jennings, 2011). In academia, particularly in the field of art history, the importance of African fashion is quickly gaining recognition (Gott & Loughran, 2010; Hansen & Madison 2013; Rovine, 2015). Many old items were replaced by new trends in the 20th century, which changed the fashion industry in Ghana. In the beginning of the 2000's, Ghana fashion industry took a new dimension (Asante, 2016). According to her, the marketing of new products and the development of African fabrics through fashion shows began to boost the industry's growth and raise public awareness.

The Ghana's fashion industry was awakened by the Presidential Special Initiative (PSI), which gave opportunities to local fashion designers to export their products to the American market through the African Growth and Opportunities, Act (AGOA) (QUARCOO, 2011). Ghana Statistical Service survey in 2016 found out that, Ghana's fashion industry is dominated by the informal sector (GSS, 2016). Thus, to enter into fashion industry in Ghana, one merely requires a small working capital to start a business, sewing skills and the ability to design. The International Labour Organization describes it as a low concentrated area of business because entrance into the business is relatively easy requiring little or no capital with low skills (ILO report, 2015).

According to the Ghana Investment Promotion Center, the fashion industry in Ghana has more establishments in the manufacturing sector than any other industry. (GIPC report, 2004; JICA report, 2008). The products of the fashion industry in Ghana is largely consumed by individuals, followed by sales to supermarket, open-market

vendor, sale agents private enterprises, government organizations and sometimes manufacturer's outlets (JICA report, 2008). A more reason why this study needs to be undertaken to explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance.

According to Asante (2016), the fashion industry was awakened by the introduction of the 'National Friday Wear' by the Government in 2004. She realized that Ghanaians typically love to wear their awesome clothes with local Adinkra symbols like Akoben, Dwennimmen, Epa, Gye Nyame, etc. The Ghanaian people honor their backgrounds, it is a word of love and respect to wear written traditional symbols. Following the above was diversity, innovations, and efficiency of textiles and fashion that was designed primarily to use knowledge, technology, and time to adopt indigenous materials for making clothing which should have local and international appeal and attract significant financial rewards. As a result of the above revelation, the current study would like to establish different methods for remodelling used clothes in selected fashion houses in the Kumasi Metropolis.

2.6 Conceptual Framework

A Conceptual Framework was adopted based on the extensive review of literature. Figure 2.1a and 2.1b identify the variables and the relationship among the study variables. The figure 2.1a indicates the conventional linear model of the life cycle of clothes which eventually ends up as a waste in the environment. With the introduction of remodelling as a sustainable method, the clothes when disposed off becomes a raw material to be remodeled or renovated into new clothes. Remodelling decreases waste to the its minimum if not completely eliminate.

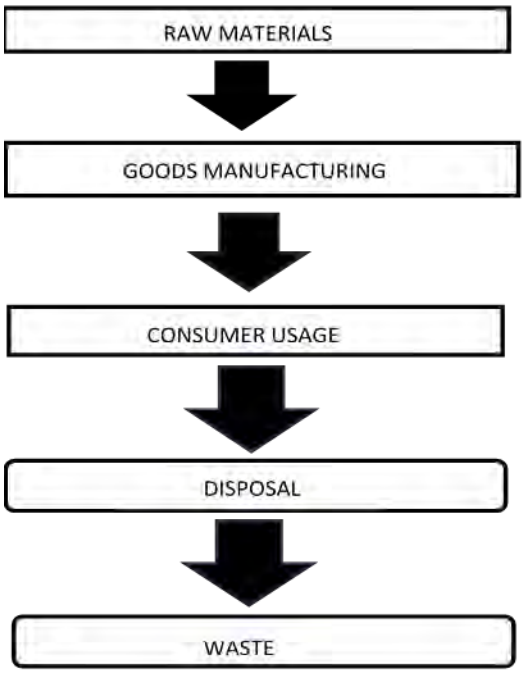

Fig. 2.1a Conceptual framework

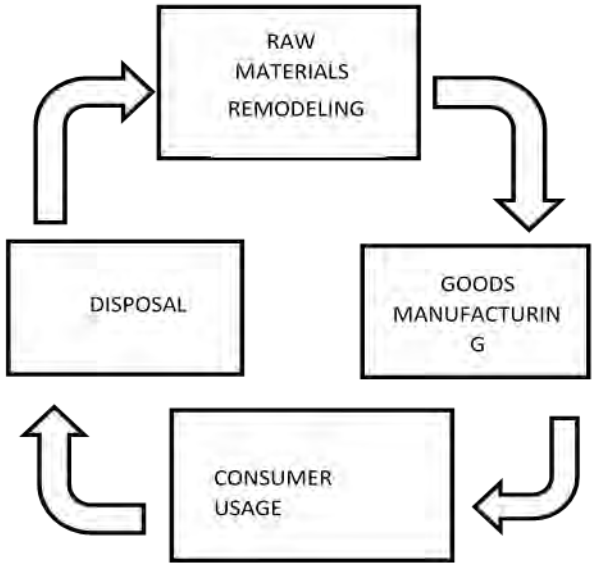

Fig. 2.1b Conceptual framework

Source: Arthur, 2020

CHAPTER THREE

METHODOLOGY

3.1 Introduction

The methodology adopted for the analysis is discussed in this section. Centered on the research issues, the chapter presents and justifies methods used in data collection. It includes elements such as research design, populations, sampling and sample size methods, data sources, tools and procedures for data collection, and techniques for data analysis**.**

3.2 Research Approach

For this analysis, the mixed method approach was adopted. The mixed method approach involves the compilation concurrently or sequentially of both numerical and text information to better explain research issues, with the final database containing both quantitative and qualitative information (Creswell & Clark, 2007). This approach is normally applied whenever one wants to collect both qualitative and quantitative data at the same time (Yin, 2012). Simultaneous or concurrent or parallel mixed method was applied in this study.

The study employed interview and questionnaire in collecting the data. Both instruments were used at the same time in collecting the data. The qualitative data were collected using interview and the quantitative data were collected using questionnaire.

3.3 Research Design

Research design is the studies plan that guide the collection of data and the analysis of the data (Saunders, 2009). The design shows the direction of the study. It is the main plan used in assessing the objectives of the study through the answering of the research questions. According to Cooper and Schindler (2006), the design may be complexed by readiness of a large variety of methods, procedures, protocols and sampling technique. The more complexed the research design takes the classier the design could be. There are number of research design which was considered and the best that suit this study was chosen.

3.3.1 Correlational Research Design

For this design, the researcher is able to study the degree of association between two or more indicators. The association is mostly determined through correlation analysis. It is suggested that if a statistical association exist among variables, it is conceivable the value or features of one variable can be predicted based on the information from available on the others (Mugenda, 2008). According to Mugenda and Mugenda (2003), correlation is the measure of degree of relationship between two or more variable.

3.3.2 Survey Research Design

It is about collecting data from elements or entities or members of a population in order to describe the current position of that population with respect to one or more indicators (Mugenda & Mugenda, 2003). This design concerned with descriptive study where the study describes, records, analysis and interprets conditions or association that exist, processes that are on-going or trends that are developing about a given scenario

3.3.3 Descriptive design

For descriptive design, the study gives a description about the state of affairs of a situation (Kombo & Tromp, 2006). Gay (1981) was of the view that descriptive design is about collecting data to test hypotheses. For descriptive design, questions about current status of the subject being studied are answered. The basis of descriptive design is about making hypotheses and using statistical principles of measure of dispersion and averages, to bring out interrelationship between variables being studied (Mugenda, 2008).

This study used the descriptive design. This study employed descriptive design because it offers the probability for a given aspect of the research questions to be studied in detailed with least resources. It is a practical technique through which data are collected and analyzed in order to define the existing situations or the associations between two variables (Kothari, 2012).

3.4 Population

To Cooper and Schindler (2014), population refers to entire group of members or subject of interest of a study. For a study, the population is total collection of elements upon which the findings will be based. The study focused on remodelling of used garment and the people who make it happen. The study's focus was on the fashion industry which include dressmakers, itinerant seamstress, alteration seamstress and the large fashion industries that employ at least 5 people in Kumasi Metropolis. Even though, remodelling of used clothes is done in small quantities, many people in and around Kumasi Metropolis depend on it for a living. It is an important aspect of the garment industry. This study therefore wishes to establish the forms of remodelling,

establish its economic viability in the industry and also establish its sustainability. The study population was drawn from all the fashion industry players in Kumasi Metropolis.

A sample frame, according to Cooper and Schindler (2014), is the list of all members of a population from which the sample for a study is actually drawn. They explained that it covers the entire representative members in the population of study. For this study, the sampling frame was made up of a list of all persons involved in the fashion industry in the Central Business Area (CBA) of the Kumasi Metropolis.

3.5 Sample Size and Sampling Technique

Sampling is the process of gathering people, items and objects for a study (Orodho, 2003). Sampling is about selecting a number of members from a population such that those selected is a representation of the characteristics of target population. The process of selected members for a study must be formulated by the researcher (Kothari, 2004). This study employed two types of sampling methods. They were purposive sampling and convenience sampling.

The study first, employed purposive sampling to select owners of five fashion houses who were designers at the CBA for interview. They were selected based on their experience in the industry and their location too. To Cresswell, Plano and Clark, (2011), purposive sampling is used when one wants to sample the views of people who have rich knowledge on a subject matter.

The second sampling technique used was the convenience sampling. The technique is also called accidental sampling since the researcher picks elements or members of observation as they become available to her (Mugenda & Mugenda, 2003). One hundred and seventy-five (175) fashion industry players from the CBA were conveniently sampled for the study. They included senior apprentices of large fashion designers' shops at CBA, dressmakers, itinerant seamstresses in and around the CBA, and Alteration seamstresses at CBA. They were respondents for the questionnaire. Convenience sampling technique was employed because of their large population and also difficulty in locating them.

Table 3.1: Classes of Respondents

Category of Respondents	Number of Respondents	Percentages of Respondents (%)
Dressmakers	115	63
Itinerant Seamstresses	30	17
Alteration Seamstresses	20	11
Senior Apprentices	10	6
Fashion Designers	5	3
Total	**180**	**100**

For a study, it is appropriate to settle on representative sample from the population. To Christensen (2001), the representative elements drawn from the target population is called accessible population since they are the members or people of the population that are available to the researcher. Sampling mostly, is less time consuming and not all that costly. To Nyademo (2007), sampling is normally practicable when the population is infinitely large. The total sample size of the study was 180.

3.6 Data Collection Instruments

Primary data source was used in this study. Quantitative data for the study were obtained using structured questionnaire. The qualitative data was obtained using interview.

3.6.1 Questionnaire

The use of questionnaires promises broader coverage, according to Gordor, Akar and Howard (2006), as researchers can reach respondents more effectively than other approaches. Thus, the questionnaire is a powerful way to obtain a wide variety of data from a broad number of people or respondents. In this case, fashion houses responded to the questionnaire. Furthermore, questionnaire provides researchers a standard procedure for collecting primary data that are comparable, irrespective of who collected them. Questionnaires also enhance the accuracy of recording and make data processing easier.

The questionnaire was structured into sections where the section focused on the study's goals in order to ensure that the questionnaire was configured to meet the research questions and objectives of the study. The first part of the questionnaire, however, focused on the demographic characteristics of the respondents, including gender, age, level of education and the number of years in the industry. The aims of the analysis were covered in the second to fourth sections.

The respondents were expected to give their views on the stated questions. Some of the questions were categorical where yes or no responses were involved. Some of them too were open ended where respondents were expected to provide their own responses.

Responses were also provided to some questions for respondents to make a choice depending on their understanding and what they do when it comes to remodelling or renovating. The questionnaire has 22 items. The questionnaire was administered by the researcher with four research assistants. Three weeks was used for the administration of the questionnaire due to the spread nature of the respondents.

3.6.2 Interview

Interviewing was the second data collection tool. For the interview, five owners of five fashion houses were chosen. The formal interview was based on the goals of the report. The interview guide had 16 items on it. With each taking 20-45 minutes, five interviews were arranged. The interviews were recorded and play back to the interviewees for them to confirm their responses. Five owners of fashion houses who were designers at the CBA were interviewed face to face.

Table 3.2: Objectives and Data Collection Instrument

Research Objectives	Instruments
1. To establish different methods for remodelling used clothes in some selected fashion houses in the Kumasi Metropolis	• Questionnaire/Interview
2. To determine the effect of remodeling of used clothing on the Ghanaian economy.	• Questionnaire/Interview
3. To explore the sustainability practice of fashion houses in the Kumasi Metropolis regarding their social and environmental performance	Questionnaire/Interview
4. To develop a framework for remodeling of used clothing in Ghana.	• Interview

Source: Researcher's construct, 2020

3.7 Pre-testing of Instruments

In order to assess the efficacy of a survey instrument, it is important for it to be pre-tested, according to Tanner (2011). The questionnaire and the interview guide were given to the supervisor for review in order to ensure the instrument's validity, as validity is decided by expert judgment (Tanner, 2011). In addition, the methods were also pilot-tested to assess how accurate the key survey is for data collection. In this context, among some fashion houses in Adum, Kumasi, the questionnaire and the interview guide were pre-tested.

During the main analysis, the pre-testing of the survey instrument was to help recognize possible problems by enhancing the interview and questionnaire questions, avoiding duplication, and defining key issues to be discussed. After the pre-test, a few modifications were made to the instrument. The pre-test was specifically performed for:

- Development and testing of the adequacy of study tools
- Assess the feasibility of the tools; and
- Evaluate whether the study protocol was practical and workable or not.

3.8 Validity and Reliability

In the course of the pre-testing analysis, the validity of the instruments was carried out to check the accuracy of the data collection tool. Validity is the ability of the research instrument to measure what is supposed to be measured (Ghazali, 2016). The validity of the construct, face and content was defined by pre-testing the instrument used in this analysis. Based on the pre-testing, some of the questions were restructured. The grammatical errors were corrected.

The reliability of the tools was instituted through a pre-testing study that were taken by 10 fashion houses in Adum, Kumasi who qualified to be part of the population of the study but not part of the target population. However, the characteristics of Adum, Kumasi do not differ from that of the target population.

3.9 Method of Data Analysis

The data was coded and fed into SPSS program, version 23.0, for Windows after cleaning up the data from the correction of the errors that were detected. In order to produce a descriptive image of the data obtained, research was performed. Descriptive statistics and Pearson's correlation analysis were used with the SPSS program. Based on the chosen study paradigms, mixed-analysis includes the use of both quantitative and qualitative analytical methods within the same context. Through descriptive and interpretive methods, the data was analyzed. Quantitative data from the questionnaire were coded. The descriptive statistics was used to summarize, arrange and explain the responses using frequency tables, percentages, mean and standard deviations. Crosstabulation and Pearson Chi-Square test were also used in the analysis.

For the interview, common responses were obtained and compared to the questionnaire outcome to help conclude on the objectives of the study. Recorded voices were transcript and analyzed qualitatively.

3.10 Ethical Consideration

Permission was sought from all who participated in the study. They were assured of confidentiality. They were informed that the study was purposely for academic work and nothing else. No one was forced to answer the questionnaire or response to the interview.

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

This chapter looks at data analysis of the study. The chapter was organized around the objectives of the study. The study had approximately 89% response rate. This was due to discarding of some questionnaires as a result of incompleteness. The first section of the study was about the demographic characteristics of the respondents for both questionnaire and the interview guide. The next section was on the interview of the five owners of fashion house at CBA. The interview responses were organized using the objectives of the study.

Furthermore, the next section was on the questionnaire which was also organized using the objectives of the study. The last section was about the discussion of the results of the study. This was also done based on the objectives of the study.

4.2 Analysis of the Questionnaire

This section reflects the responses of the respondents as presented by the questionnaire and analyzed. This section was organized based on the objectives of the study.

4.2.1 Demographic Characteristics of the Questionnaire Respondents

The Figure 4.1 depicts the gender of the questionnaire respondents.

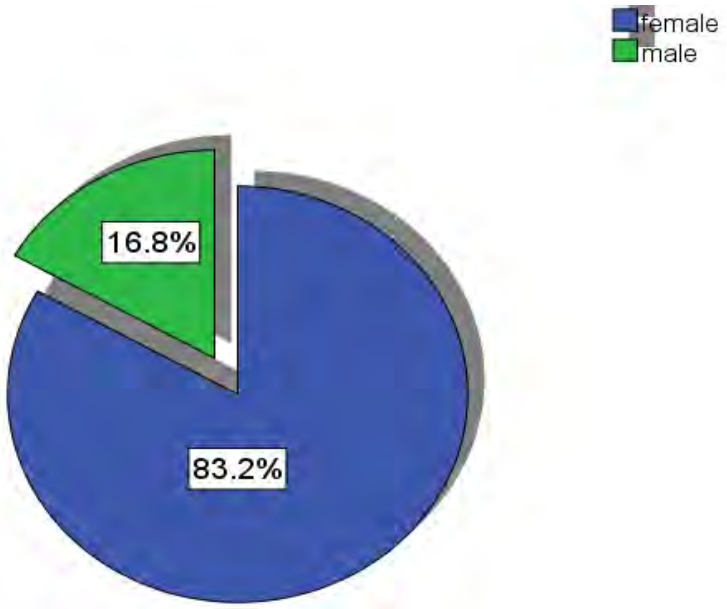

Figure 4.1: Gender Distribution
Source: Field Survey, 2020

The analysis shows that 16.8% of the respondents were males whilst 83.2% were females. This means that majority of the questionnaire respondents were females. This implies that the fashion industry players sampled were full of female fashion designers.

The Figure 4.2 depicts the age distribution of the respondents of the questionnaire. From the interview, the average age was 36-45 years.

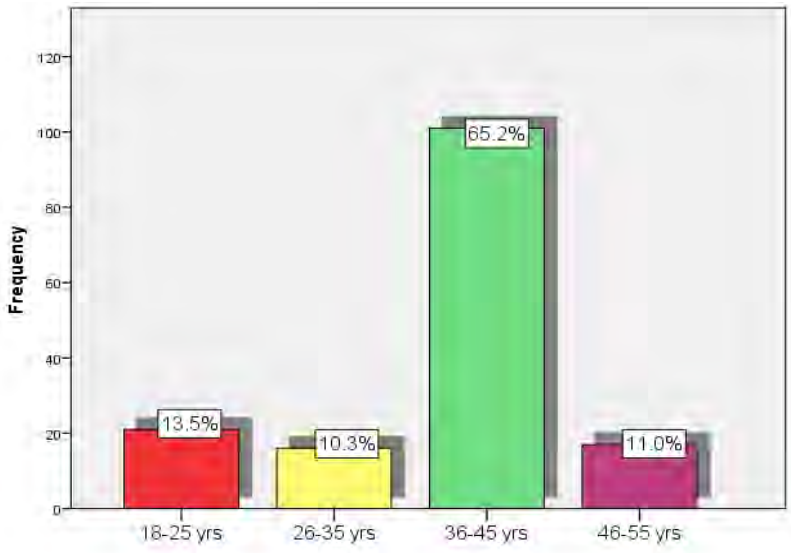

Figure 4.2: Age Distribution
Source: Field Survey, 2020

From the results, 13.5% of the respondents were in the age cohort 18-25 years, 10.3% were in the age group 26-35 years, 11.0% were in the age group 46-55 years. Majority, representing 65.2% of the respondents were in the age cohort 36-45 years of age. This means that the average age group of the respondents of the study was 36-45 years and they have the ability and energy to work in the fashion industry.

Table 4.1 depicts the educational levels of the respondents. From the analysis, 9 representing 5.8% of the respondents had tertiary certificate and 39 representing 51.0% also held second cycle certificate.

Table 4.1: Educational level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tertiary	9	5.8	5.8	5.8
	Second Cycle	39	25.5	25.5	51.0
	Basic Education	48	31.0	31.0	62.0
	NVTI	59	38.0	38.0	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field Survey, 2020

From the Table 4.1, 48 representing 31.0% of the respondents held basic education certificate and 59, representing 38.0% of the respondents held NVTI in fashion related course. This means that all the respondents have fair knowledge on the topic being studied.

Table 4.2: Years in the Fashion Industry

	Years in the Fashion Industry	Freq (n)	Percent (%)	Valid Percent	Cumulative Percent
Valid	1-5 yrs	37	23.9	23.9	23.9
	6-10 yrs	31	20.0	20.0	43.9
	11-15 yrs	34	21.9	21.9	65.8
	16- 20 yrs	19	12.3	12.3	78.1
	Above 20 yrs	34	21.9	21.9	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field Survey, 2020

The Table 4.2 shows years respondents have been in the fashion industry. This shows their experience when it comes to the fashion world in the Metropolis. From the table 4.2, 37 representing 23.9% of the respondents have been in the industry for 1-5 years, 31 representing 20.0% have been in the industry for 6-10 years, 11-15 years representing 21.9%, 16-20 years representing 12.3% and above 20 years representing 21.9%. This means that majority of the respondents have had at least 6 years fashion industry experience and when it comes to knowledge, creativity, skills they have the experience.

On which category of the industry the respondents fell, the Table 4.3 depicts the responses. From the Table 4.3, 9 which represents 5.8% of the entire respondents were chief apprentice of a fashion house, 106 which represents 68.4% were dressmakers, 22 representing 14.2% were itinerant seamstresses and 18 respondents, representing 11.6% were alteration seamstresses.

Table 4.3: Categories of the respondents by work

	Categories of the respondents by work	Freq (n)	Percent (%)	Valid Percent	Cumulative Percent
Valid	Chief Apprentice of a fashion house	9	5.8	5.8	5.8
	Dressmaker	106	8.4	68.4	74.2
	Itinerant seamstresses	22	14.2	14.2	88.4
	Alteration seamstresses	18	11.6	11.6	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field Survey, 2020

This means that majority of the respondents were dressmakers, this was followed by itinerant seamstresses and then alteration seamstresses.

By the outcome of the demographic analysis, it could be said that majority of the respondents were female who were in the age cohort 36-45 years on average. Most of them have the needed educational qualifications and they have been in the fashion industry for at least 6 years. With this background, it could be said that the respondents were appropriate and knowledgeable people to response to the questionnaire and the interview guide.

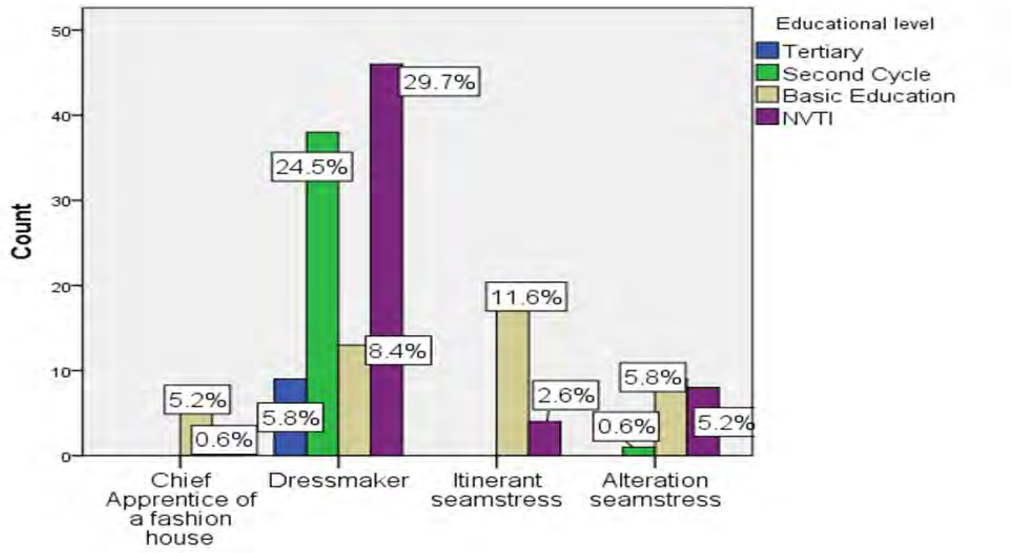

Figure 4.3: Educational level and Type of work
Source: Field survey, 2020

From Figure 4.3, 5.2% representing majority of the respondents who were chief apprentice of a fashion house had basic education certificate and the rest of them representing 0.6% had NVTI certificate. This means that chief apprentice of the fashion houses had either basic education certificate or NVTI certificate. For the dressmakers, majority, representing 29.7% had NVTI certificates, this was followed by 24.5% with second cycle education, then 8.4% with basic education, and 5.8% had tertiary certificate.

From Figure 4.3, 11.6% of the itinerant seamstresses had basic education certificate and 2.6% had NVTI. For the alteration seamstresses, 5.8% had basic education certificate, 5.2% had NVTI and 0.6% second cycle certificate.

Table 4.4 depict Chi-square test results of the hypothesis that there is no association between respondent's category of work and educational level.

Table 4.4: Chi-Square Tests of no association between category of work and educational level

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	67.043[a]	12	.000
Likelihood Ratio	74.972	12	.000
Linear-by-Linear Association	5.030	1	.025
N of Valid Cases	155		

Source: Field survey, 2020

From Table 4.4, the Pearson Chi-Square value was 67.043 and the p-value was 0.000 which means that the hypothesis of no association is rejected at significance level of 1%. It could therefore be said that there is association between respondent's category of work and educational level. This means that one's educational level determines the category one will find him/herself.

4.2.2 Responses from the Questionnaire

This section reflects the responses of the respondents as presented by the questionnaire and analyzed. This section was organized based on the objectives of the study.

4.2.2.1 Method for Remodelling

The respondents were asked whether they do remodel of used clothes, the responses of the respondents can be found in figure 4.4.

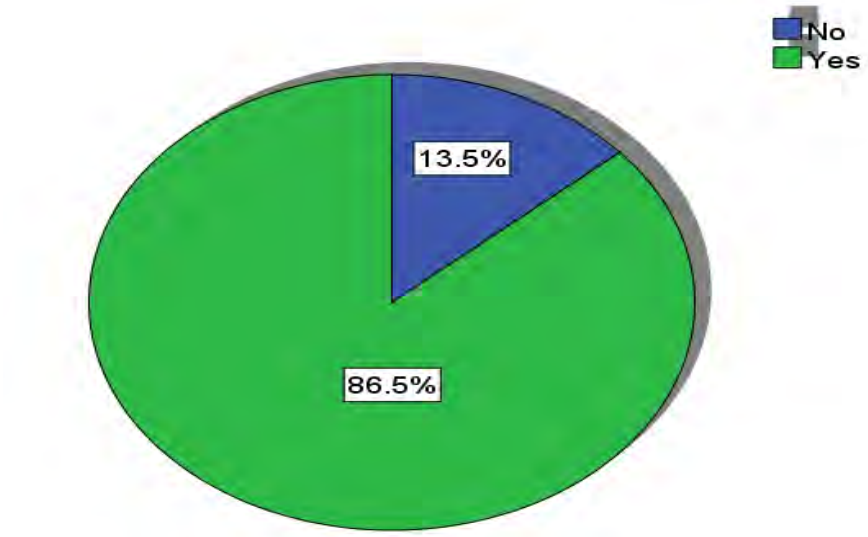

Figure 4.4: Response on whether respondents do remodel of used clothes
Source: Field survey, 2020

From the analysis, 13.5% of the respondents chose no whilst 86.5% of them chose yes. This means that majority of the respondents sampled do practice remodelling of used clothes.

Figure 4.5 presents the crosstabulation of category of respondents and whether they do remodel. The responses to whether respondents remodeled used clothes into new ones, the responses in Figure 4.5 shows that all the chief apprentice chose yes, 59.4% of the dressmakers chose yes with 9.0% of them choosing no. For the itinerant seamstress, 11.0% chose yes with 3.2% of them choosing no. Majority, representing 10.3% of the alteration seamstress chose yes with 1.3% of them choosing no.

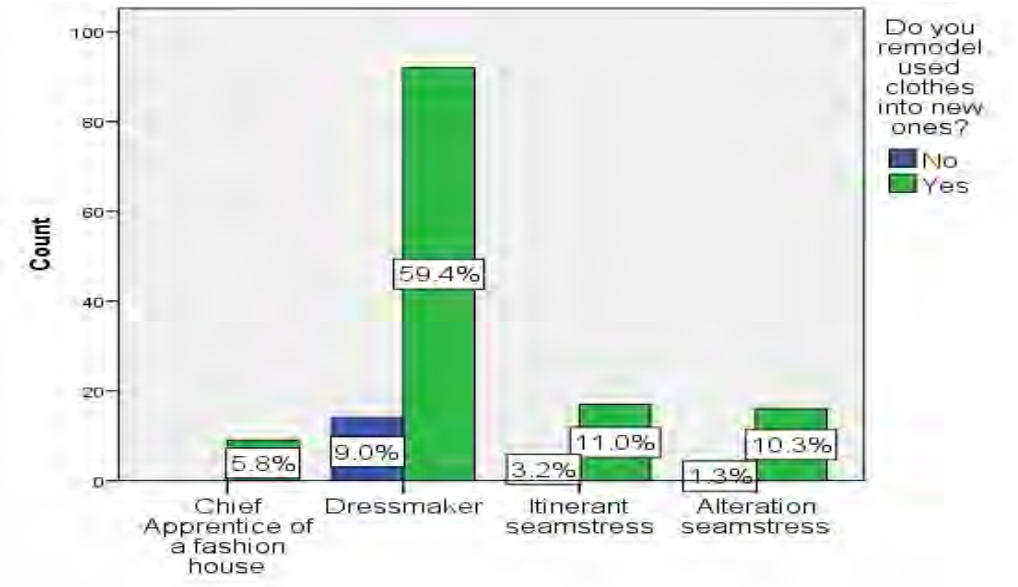

Figure 4.5: Crosstabulation of category of respondents and responses on whether they remodel used clothes

Table 4.5 depicts Chi-square test results of category of respondents and responses on whether they remodel used clothes

Table 4.5 Chi-square test results of category of respondents and responses on whether they remodel used clothes

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.095[a]	3	.377
Likelihood Ratio	4.084	3	.253
N of Valid Cases	155		

Source: Field survey, 2020

Table 4.5 shows Pearson Chi-Square test value of 3.095 and p-value of 0.377. It could therefore be said that responses on whether respondents remodel used clothes and category of respondents are not related. This means that each category of the respondents have their own view concerning remodelling of used clothes and their similarities being observed is by chance.

Those who chose no, they do not do remodelling of used clothes, gave the following reasons: "*customers prefer new ones*", "*my clients want their items made in new fabrics*"; and "*clients are ready to pay any amount you charge for a new cloth as compared to remodelling*".

Table 4.6 depicts the responses of "yes" respondents on where they get the used clothes from.

Table 4.6: Responses on ways of getting used clothes

		Responses		Percent of Cases
		N	Percent	
How to get used clothes	Imported secondhand clothes	67	22.5%	48.6%
	Home used clothes from consumers	70	23.5%	50.7%
	Store reject from fashion stores	102	34.3%	73.9%
	In-house innovation and other fashion houses	26	8.7%	18.8%
	From waste disposal agents	4	1.3%	2.9%
	Old dress	29	9.7%	21.0%
Total		298	100.0%	200.7%

Source: Field survey, 2020

From the Table 4.6, 67 representing 22.5% of the respondents get their used clothes from imported secondhand clothes, 70 representing 23.5% also said they get it from home used clothes from consumers, 102 representing 34.3% of the responses get it from store reject from fashion stores, 26 representing 8.7% of the responses get it from inhouse innovation and other fashion houses, 4 representing 1.3% of the responses get it from waste disposal agents and 29 representing 9.7% of the responses get it from old dresses.

It could be said that most of them get their used clothes from store reject from fashion stores, from home used clothes from consumers, and from imported secondhand clothes.

The means through which one can get used clothes were grouped into imported secondhand clothes (1), home used clothes from consumers (2), store reject from fashion stores (3), in-house innovation and other fashion houses (4), from waste disposal agents (5), and old dress (6). The researcher in confirming which means most people get their used clothes did it in terms of category of the respondents. From Table 4.7, the minimum observation of chief apprentice was 1 and the maximum observation was 6. The mean score for chief apprentice of fashion houses was 3.22. This means that most chief apprentice get their used clothes from store reject from fashion stores.

Also, from Table 4.7, the minimum observation for dressmakers was 1 and the maximum was 6. The median was 2 and the mean was 2.51. It could be said with about 95% confidence that the mean of dressmakers when it comes how they get used clothes fell between 2.22 to 2.80. It could therefore be imply that most of the dressmakers opted for store reject from fashion stores as how they get used clothes to do remodelling.

Table 4.7: Descriptives of the responses of category of respondents on how to get used clothes

	What category most characterize your work now?			Statistic	Std. Error
How to get used clothes	Chief Apprentice of a fashion house	Mean		3.22	.619
		95% Confidence Interval for Mean	Lower Bound	1.80	
			Upper Bound	4.65	
		5% Trimmed Mean		3.19	
		Median		3.00	
		Variance		3.444	
		Std. Deviation		1.856	
		Minimum		1	
		Maximum		6	
	Dressmaker	Mean		2.51	.146
		95% Confidence Interval for Mean	Lower Bound	2.22	
			Upper Bound	2.80	
		5% Trimmed Mean		2.40	
		Median		2.00	
		Variance		2.252	
		Std. Deviation		1.501	
		Minimum		1	
		Maximum		6	
	Itinerant seamstress	Mean		3.00	.354
		95% Confidence Interval for Mean	Lower Bound	2.26	
			Upper Bound	3.74	
		5% Trimmed Mean		2.94	
		Median		3.00	
		Variance		2.762	
		Std. Deviation		1.662	
		Minimum		1	
		Maximum		6	
	Alteration seamstress	Mean		2.28	.311
		95% Confidence Interval for Mean	Lower Bound	1.62	
			Upper Bound	2.93	
		5% Trimmed Mean		2.14	
		Median		2.00	
		Variance		1.742	
		Std. Deviation		1.320	
		Minimum		1	
		Maximum		6	

Source: Field survey, 2020

The results in Table 4.7 also shows minimum value of 1 and maximum value of 6 for itinerant seamstress. The median and the mean of the responses by itinerant seamstresses were the same (3). This means that they also went for store reject from fashion stores. However, for the alteration seamstress, their mean was 2.28 and the median was 2.00. It could be said that the mean and the median are approximately equal and that most of the alteration seamstresses opted for home used clothes from

consumers. This therefore affirms the earlier assertion that most of the respondents who practice remodelling get their used clothes from store reject from fashion stores.

They were then asked to indicate the method they used for the remodeled clothes. Table 4.8 depicts responses on methods of remodelling with respect to category of the respondents.

The methods were coded as follows: Beading (1); Quilting (2); Reshaping (3); Dying (4); Freshening up (5); Combination of two or more materials (6); Cutting down (7); Patching (8) and Applique (9). This was to find out the method the categories of the respondents applied the most. Mean score, median, minimum value and maximum value were the tools used to assess the responses.

From the Table 4.8, for Chief Apprentices of a fashion house, the mean was 5.67 and the median was 6.00 with minimum observation being 1 and maximum being 8. The mean was between 3.82 and 7.51 confidence interval. This means that the mean of chief apprentice concerning method of remodelling is evenly distributed. It could therefore be said that most chief apprentices apply combination of two or more material as their method of remodelling.

Table 4.8: Descriptives of the responses of category of respondents on methods of remodelling

	What category most characterize your work now?			Statistic	Std. Error
Methods of remodelling	Chief Apprentices of a fashion house	Mean		5.67	.799
		95% Confidence Interval for Mean	Lower Bound	3.82	
			Upper Bound	7.51	
		5% Trimmed Mean		5.80	
		Median		6.00	
		Variance		5.750	
		Std. Deviation		2.398	
		Minimum		1	
		Maximum		8	
	Dressmakers	Mean		4.56	.225
		95% Confidence Interval for Mean	Lower Bound	4.11	
			Upper Bound	5.00	
		5% Trimmed Mean		4.55	
		Median		4.50	
		Variance		5.373	
		Std. Deviation		2.318	
		Minimum		1	
		Maximum		9	
	Itinerant seamstresses	Mean		5.36	.499
		95% Confidence Interval for Mean	Lower Bound	4.33	
			Upper Bound	6.40	
		5% Trimmed Mean		5.46	
		Median		6.00	
		Variance		5.481	
		Std. Deviation		2.341	
		Minimum		1	
		Maximum		8	
	Alteration seamstresses	Mean		4.56	.590
		95% Confidence Interval for Mean	Lower Bound	3.31	
			Upper Bound	5.80	
		5% Trimmed Mean		4.51	
		Median		5.00	
		Variance		6.261	
		Std. Deviation		2.502	
		Minimum		1	
		Maximum		9	

Source: Field survey, 2020

For the dressmakers and from the table, the 95% confidence interval was 4.11 to 5.00. This means that there is 95% assurance that the mean will fall in the interval. The mean from the Table was 4.56 and the median was 4.50. With the mean and the median approximately the same, it could be said that responses by the dressmakers on the

methods of remodelling was normally distributed. It could be said that most dressmakers used freshening up method for remodelling.

Table 4.8 depicts a mean of 5.36 which fell between 4.33 and 6.00 confidence interval. The median was 6.00 with minimum observation being 1 and maximum being 8. It could therefore be said that most Itinerant seamstress apply freshening up as their method of remodelling.

For the Alteration seamstresses and from Table 4.8, the 95% confidence interval was 3.31 to 5.80. This means that there is 95% assurance that the mean will fall in the interval. The mean from the Table was 4.56 and the median was 5.00. With the mean and the median approximately the same, it could be said that responses on be the Alteration seamstresses on the methods of remodelling was normally distributed. It could be said that most Alteration seamstresses used freshening-up method for remodelling.

A part from chief apprentices who used combination of two or more materials as their method of remodelling, dressmakers, itinerant seamstresses and alteration seamstresses use freshening up method.

Table 4.9 depicts the crosstabulation of the methods for remodel used clothes and how they get the used clothes. From the analysis, 43.8% of all the responses from the respondents who used imported secondhand clothes normally used beading method. From the results, 52.8% of all the responses from respondents who said they get their used clothes from home used clothes from consumers employed beading. The results

show 89.4% of the responses on store reject from fashion stores considered reshaping as method of remodelling.

From the result in Table 4.9, 100% of all responses from waste disposal agents also responded on reshaping as a method for remodelling. From Table 4.9, 86.3%, 87.5%, 90.9%, 88.5%, 75.0% and 89.7% of the responses on imported secondhand clothes, home used clothes from consumers, store reject from fashion stores, in-house innovation and other fashion houses, from waste disposal agents and old dress, respectively, also responded on combination of two or more materials as remodelling method.

From the analysis, 63.8%, 65.3%, 60.6%, 53.8%, 50.0%, 58.6% of the responses on imported secondhand clothes, home used clothes from consumers, store reject from fashion stores, in-house innovation and other fashion houses, from waste disposal agents and old dress, respectively, also responded on patching as remodelling method.

Looking at the Table in terms of within methods, 38 representing 61.3% which is majority of respondents who use beading method get their used clothes from home used clothes from consumers.

Table 4.9: Crosstabulation of Methods of remodelling and how respondents get used clothes

			How to get used clothes						Total
			Imported secondhand clothes	Home used clothes from consumers	Store reject from fashion stores	In-house innovation and other fashion houses	From waste disposal agents	Old dress	
Methods	Beading	Count	35	38	33	11	2	13	62
		% within Methods	56.5%	61.3%	53.2%	17.7%	3.2%	21.0%	
		% within used clothes	43.8%	52.8%	50.0%	42.3%	50.0%	44.8%	
		% of Total	25.4%	27.5%	23.9%	8.0%	1.4%	9.4%	44.9%
	Quilting	Count	32	21	19	8	1	9	49
		% within Methods	65.3%	42.9%	38.8%	16.3%	2.0%	18.4%	
		% within used clothes	40.0%	29.2%	28.8%	30.8%	25.0%	31.0%	
		% of Total	23.2%	15.2%	13.8%	5.8%	0.7%	6.5%	35.5%
	Reshaping	Count	68	62	59	23	4	26	118
		% within Methods	57.6%	52.5%	50.0%	19.5%	3.4%	22.0%	
		% within used clothes	85.0%	86.1%	89.4%	88.5%	100.0%	89.7%	
		% of Total	49.3%	44.9%	42.8%	16.7%	2.9%	18.8%	85.5%
	Dying	Count	18	15	12	3	0	4	27
		% within Methods	66.7%	55.6%	44.4%	11.1%	0.0%	14.8%	
		% within used clothes	22.5%	20.8%	18.2%	11.5%	0.0%	13.8%	
		% of Total	13.0%	10.9%	8.7%	2.2%	0.0%	2.9%	19.6%
	Freshening up	Count	22	21	22	7	1	8	41
		% within Methods	53.7%	51.2%	53.7%	17.1%	2.4%	19.5%	
		% within used clothes	27.5%	29.2%	33.3%	26.9%	25.0%	27.6%	
		% of Total	15.9%	15.2%	15.9%	5.1%	0.7%	5.8%	29.7%
	Combination of two or more materials	Count	69	63	60	23	3	26	122
		% within Methods	56.6%	51.6%	49.2%	18.9%	2.5%	21.3%	
		% within used clothes	86.3%	87.5%	90.9%	88.5%	75.0%	89.7%	
		% of Total	50.0%	45.7%	43.5%	16.7%	2.2%	18.8%	88.4%
	Cutting down	Count	25	23	27	12	2	11	49
		% within Methods	51.0%	46.9%	55.1%	24.5%	4.1%	22.4%	
		% within used clothes	31.3%	31.9%	40.9%	46.2%	50.0%	37.9%	
		% of Total	18.1%	16.7%	19.6%	8.7%	1.4%	8.0%	35.5%
	Patching	Count	51	47	40	14	2	17	82
		% within Methods	62.2%	57.3%	48.8%	17.1%	2.4%	20.7%	
		% within used clothes	63.8%	65.3%	60.6%	53.8%	50.0%	58.6%	
		% of Total	37.0%	34.1%	29.0%	10.1%	1.4%	12.3%	59.4%
	Applique	Count	6	4	3	0	0	2	8
		% within Methods	75.0%	50.0%	37.5%	0.0%	0.0%	25.0%	
		% within used clothes	7.5%	5.6%	4.5%	0.0%	0.0%	6.9%	
		% of Total	4.3%	2.9%	2.2%	0.0%	0.0%	1.4%	5.8%
Total		Count	80	72	66	26	4	29	138
		% of Total	58.0%	52.2%	47.8%	18.8%	2.9%	21.0%	100.0 %

Source: Field survey, 2020

For majority (32) representing 65.3% of those who use quilting method get their used clothes from imported secondhand clothes. Majority (68, 57.6%) of the people who used reshaping method also chose imported secondhand clothes as their source of used clothes. The analysis shows that 66.7% of those who apply dying method chose imported secondhand clothes as their source of used clothes. For freshening up method, equal number (22, 53.7%) chose imported secondhand clothes and store reject from fashion stores.

Moreover, 69 (56.6%), 63 (51.6%), 60 (49.2%), 23(18.9%), 3(2.5%) and 26 (21.3%) of those who use combination of two or more materials method respectively, chose imported secondhand clothes, home used clothes from consumers, store reject from fashion stores, in-house innovation and other fashion houses, from waste disposal agents, and old dress. For cutting down method respondents, 25 (51.0%) chose imported secondhand clothes as means of getting used clothes, 23 (46.9%) opted for home used clothes from consumers, 27 (55.1%) chose store reject from fashion stores, 12 (24.5%) chose in-house innovation and other fashion houses, 2 (4.1%) chose from waste disposal agents and 11 (22.4%) chose old dress.

The analysis also shows Patching method respondents with 51 representing 62.2% going for imported secondhand clothes as their source of used clothes, 47 representing 57.3% going for home used clothes from consumers, 40 (48.8%) went for store reject from fashion stores, 14 (17.1%) went for in-house innovation and other fashion houses, 2 representing 17.1% going in for waste disposal agents, and 17 representing 20.7% going in for old dress. For applique method respondents, 6 representing 75.0% chose imported secondhand clothes as their source of used clothes, 4 (50.0%) chose home

used clothes from consumers, 3 representing 37.5% chose store reject from fashion stores, and 2 (25.0%) chose old dress.

In the nutshell, 44.9% of the entire respondents chose beading as a method of remodelling. The results show 35.5% of the entire respondents who do remodelling of used clothes opted for quilting as a method of remodelling. The Table shows 85.5% of the entire respondents who do remodelling chose reshaping as a method for remodelling. The results depict 19.6% of all those who chose yes for remodelling opted for dying as a method for remodelling.

From the analysis, 29.7% of all those who chose yes for remodelling opted for freshening up as a method for remodelling. From the results, 88.4% of all those who chose yes for remodelling opted for combination of two or more materials as a method for remodelling. For cutting down as a method of remodelling, 35.5% of the entire respondents who do remodelling chose it, 59.4% of the entire respondents who do remodelling also chose patching as a method of remodelling and only 5.8% of the entire respondents who do remodelling also chose applique as a method of remodelling.

Table 4.10: Chi-Square Tests of crosstabulation of Methods of remodelling and how respondents get used clothes

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	428.892[a]	35	.000
Likelihood Ratio	371.011	35	.000
Linear-by-Linear Association	124.872	1	.000
N of Valid Cases	155		

Source: Field survey, 2020

From Table 4.10, the Pearson Chi-Square value was 428.892 and the p-value was 0.000. It could be said that responses on methods of remodelling and how to get used clothes were related. This also means that a respondent response on method of remodelling largely depends on how the person gets used clothes for remodelling.

It could therefore be said that the method of remodelling identified were reshaping, combination of two or more materials, patching, beading, quilting, cutting down and freshening up. It was established that freshening up method was the most used by dressmakers, itinerant and alteration seamstresses.

The respondents gave the following as reasons for choosing the above methods of remodelling: "*it prevents waste; to beautify and enhance the cloth; depending on what details I want; to satisfy the needs of my clients; it is simple and easy to apply; for a current style in vogue; make renovation nice and new looking; it is easy to apply; it is innovative; it is used to resize the garment to a smaller size; it shows creativity; and to revamp and create a new look out of the old*".

4.2.2.2 Effect of remodelling of used clothes on the economic activities of the fashion industry

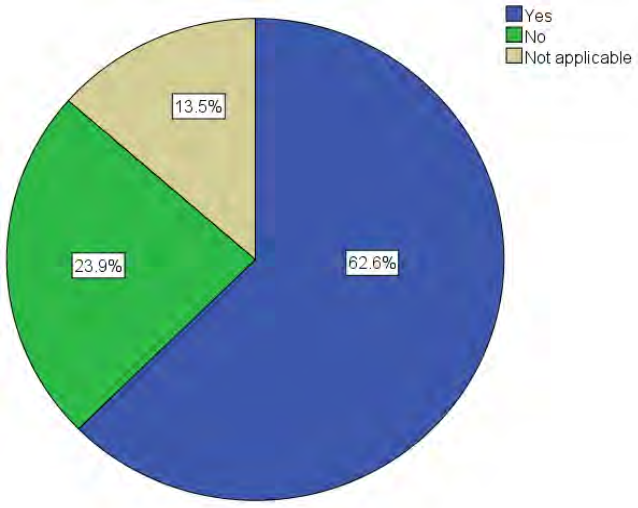

Figure 4.6: Response on patronage of remodeled clothes
Source: Field survey, 2020

Respondents were asked to indicate whether customers patronize their remodeled clothes. The Figure 4.6 presents the results. The results show that 23.9% of the respondents chose no whilst 62.6% chose yes. This means that customers patronize remodeled clothes. However, those who said no gave the following as reasons: "*what people will say; every customer and their sense of fashion; and it is not their taste or may be quite expensive*". Those who chose yes also gave the following as some of the feedbacks: "*Nice work I will come and sew another one later; good fabric; it looks new; excellent; satisfy their needs; it's one in town and beautiful; is nice and creative; nice and quality; unique designs; Consumers like the imported second-hand clothes that has been redesigned and the fabrics used are unique; save money and time; more orders from admirers; and unique styles and new product*".

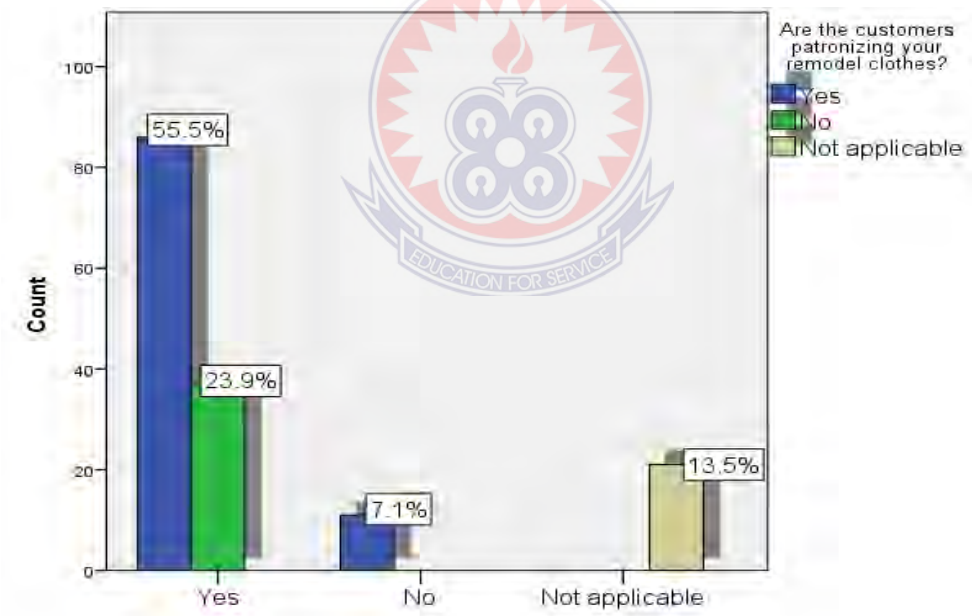

Figure 4.7 Cross tabulation of responses on difference in the remodeled clothes and new garments as against patronage of remodeled clothes

Source: Field survey, 2020

From the analysis as presented in Figure 4.7, 55.5% of those who said customers patronized remodeled clothes indicated that there is a difference between remodeled clothes and new garments. About 23.9% of those who said there is no patronage chose no. All those who said no for patronage also said that there is a difference between

remodeled clothes and new garments. About 7.1% of those who said there was patronage chose no. It could therefore be seen that 79.4% of the respondents chose yes.

From Table 4.11, Pearson Chi-Square value was 160.287 and p-value was 0.000. This means that responses on difference in the remodeled clothes and new garments was related to patronage of remodeled clothes.

Table 4.11: Chi-Square Tests of no association between responses on difference in the remodeled clothes and new garments as against patronage of remodeled clothes

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	160.287[a]	4	.000
Likelihood Ratio	130.448	4	.000
Linear-by-Linear Association	80.577	1	.000
N of Valid Cases	155		

Source: Field survey, 2020

There is therefore indication that whoever said there is difference in the remodeled clothes and new garments is likely to say that there is a patronage for remodeled clothes.

Figure 4.8 depicts crosstabulation of responses on patronage and category of respondents.

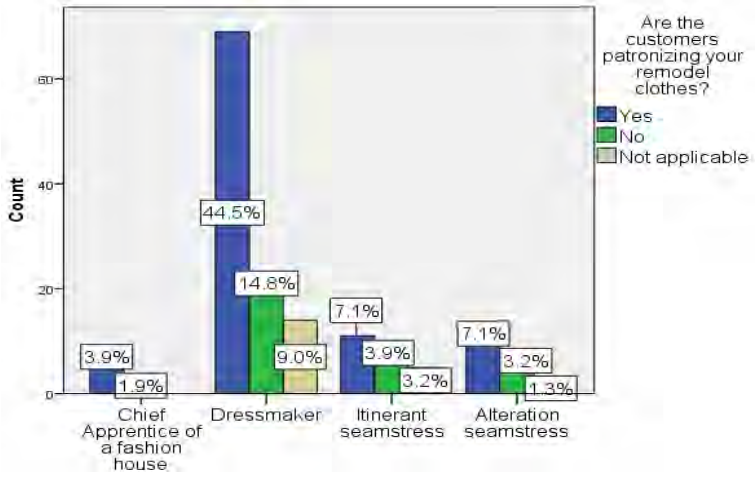

Figure 4.8: Crosstabulation of responses on patronage and category of respondents

Source: Field survey, 2020

From the Figure 4.8, 3.9% of the chief apprentices chose yes and 1.9% of them chose no. For the dressmakers, 44.5% chose yes and 14.8% chose no. Majority representing 7.1% of itinerant seamstresses chose yes and about 3.9% chose no. For alteration seamstresses, 7.1% chose yes with 3.2% choosing no. This is an indication that all the categories of respondents for the study chose yes. This means that all of them agreed that there is patronage of remodelling clothes.

Table 4.12: Chi-Square Tests of no association between responses on patronage and category of respondents

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.138[a]	6	.658
Likelihood Ratio	5.127	6	.528
Linear-by-Linear Association	.791	1	.374
N of Valid Cases	155		

Source: Field survey, 2020

With Pearson Chi-square value of 0.658 and p-value of 0.658 show that there is no association between responses on patronage and category of respondents. This means that what the chief apprentice said is independent of what the dressmakers said and that if there is a similarity then it is by chance.

This means that there is difference between remodeled clothes and new garments. For those who chose no, they gave the following reasons: "*The fabric used is in satisfactory condition*", "*that is not too weak to tear in no time*"; "*It looks professional*"; and "*Changes suit fashion of the day*". For those who chose yes, here are some of their reasons: "*new garments have not been used but remodelling articles have been used before; most fabric used are of good quality; making work come out well; care labels are attached hence you know how to care for such fabrics; can be used for different*

things; toile is being done before the actual work so you can unpick; it comes out different and very unique from the usual ones; the style of the remodeled clothes sometimes differs and more creative than the new garment; style line changes; sizes are sometimes reduced; mostly you get the original material and the work comes out perfectly as compare to a new fabric which is not really the original ones; the new garments are made with one style; nice finishing; and cheaper.

The respondents were asked to give their views on how remodeled clothes can boost the economic activities of the fashion industry. The Table 4.13 presents the crosstabulation of patronage against the effect on economic activities. From the Table 4.3, 73.3%, 75.6%, 69.9%, 63.4%, and 68.9% of the respondents who said customers patronized remodeled clothes, respectively, said remodelling reduce waste, increase jobs, makes clothes affordable, encourage the patronage of local fashion, and can be exported to other countries. However, with 26.7%, 24.4%, 30.1%, 36.6%, and 31.1% coming from the no patronage respondents, respectively, were of the view that remodelling activities has little to do with economic activities such as reduce waste, increase jobs, makes clothes affordable, encourage the patronage of local fashion, and can be exported to other countries.

In general, 78.4% of the entire respondents said remodelling of used clothes reduces waste to boost economic activities; 58.2% of the entire respondents were of the view that remodelling of used clothes increases jobs and 61.9% out of the respondents said that remodelling of used clothes makes clothes affordable to enhance economic activities of the fashion industry.

Table 4.13: Effect of economic activities on fashion industry

			Effect of economic activities on fashion industry					
			Reduce waste	Increase jobs	Makes clothes affordable	Encourage the patronage of local fashion	Can be exported to other countries	Total
Are the customers patronizing your remodel clothes?	Yes	Count	77	59	58	52	31	97
		% within $effect	73.3%	75.6%	69.9%	63.4%	68.9%	
		% of Total	57.5%	44.0%	43.3%	38.8%	23.1%	72.4%
	No	Count	28	19	25	30	14	37
		% within $effect	26.7%	24.4%	30.1%	36.6%	31.1%	
		% of Total	20.9%	14.2%	18.7%	22.4%	10.4%	27.6%
Total		Count	105	78	83	82	45	134
		% of Total	78.4%	58.2%	61.9%	61.2%	33.6%	100.0%

Source: Field survey, 2020

About 61.2% of the entire respondents said remodelling of used clothes encourage the patronage of local fashion to boost economic activities of the industry.

Table 4.14 presents responses on economic factors of the fashion industry by category of respondents. The economic factors of the fashion industry were coded as follows: Reduce waste (1); Increase jobs (2); Makes clothes affordable (3); Encourage the patronage of local fashion (4); and Can be exported to other countries (5). This was to find out the method the categories of the respondents applied the most. Mean score, median, minimum value and maximum value were the tools used to assess the responses.

From the table 4.14, for Chief Apprentices of a fashion house, the mean was 3.33 and the median was 3.00. The mean was between 2.12 and 4.55 confidence interval. This means that the mean of chief apprentices concerning economic factors of fashion

industry evenly distributed. It could therefore be said that most chief apprentices remodelling makes clothes affordable.

For the dressmakers and from the table, the 95% confidence interval was 2.41 to 2.93. This means that there is 95% assurance that the mean will fall in the interval. The mean from the table was 2.67 and the median was 3.00. With the mean and the median approximately the same, it could be said that responses by the dressmakers on economic factors of the fashion industry was normally distributed. It could be said that most dressmakers thought that remodeled clothes are affordable.

Table 4.14 depicts a mean of 3.05 which fell between 2.41 and 3.68 confidence interval. The median was 3.00. It could therefore be said that most Itinerant seamstresses believe that remodeled clothes are affordable.

For the Alteration seamstresses and from Table 4.14, the 95% confidence interval was 1.91 to 3.20. This means that there is 95% assurance that the mean will fall in the interval. The mean from the table was 2.56 and the median was 2.50. With the mean and the median approximately the same, it could be said that responses by the Alteration seamstresses on the economic factors of the fashion industry was normally distributed. It could be said that most Alteration seamstresses considered remodeled clothes as affordable.

Table 4.14: Descriptives of the responses of category of respondents on fashion economy

	What category most characterize your work now?			Statistic	Std. Error
Effect of economic activities on fashion industry	Chief Apprentice of a fashion house	Mean		3.33	.527
		95% Confidence Interval for Mean	Lower Bound	2.12	
			Upper Bound	4.55	
		5% Trimmed Mean		3.37	
		Median		3.00	
		Variance		2.500	
		Std. Deviation		1.581	
	Dressmaker	Mean		2.67	.131
		95% Confidence Interval for Mean	Lower Bound	2.41	
			Upper Bound	2.93	
		5% Trimmed Mean		2.63	
		Median		3.00	
		Variance		1.823	
		Std. Deviation		1.350	
	Itinerant seamstress	Mean		3.05	.305
		95% Confidence Interval for Mean	Lower Bound	2.41	
			Upper Bound	3.68	
		5% Trimmed Mean		3.05	
		Median		3.00	
		Variance		2.045	
		Std. Deviation		1.430	
	Alteration seamstress	Mean		2.56	.305
		95% Confidence Interval for Mean	Lower Bound	1.91	
			Upper Bound	3.20	
		5% Trimmed Mean		2.51	
		Median		2.50	
		Variance		1.673	
		Std. Deviation		1.294	

Source: Field survey, 2020

It could therefore be said that remodelling could reduce waste, increase jobs, makes clothes affordable and also encourage the patronage of local fashion to enhance economic activities of the industry. However, most respondents believe that remodeled clothes are economically affordable.

4.2.2.3 Sustainability

The last objective is about sustainability of the remodelling of used clothes. The respondents were asked about their understanding of the concept of sustainable fashion and the responses can be found in Table 4.15. From the results, 50.3% of the respondents understood sustainable fashion to be recycling, 20.6% understood it to be timeless, 1.9% considered it as traditional handcraft, and 13.6% considered it to be does not pollute the environment.

Table 4.15: The concept of sustainable fashion

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Recycling	78	50.3	50.3	50.3
	Timeless	32	20.6	20.6	70.9
	Traditional Handcraft	3	1.9	1.9	72.8
	Do not Pollute the Environment	21	13.6	13.6	86.4
	Not applicable	21	13.6	13.6	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field survey, 2020

The respondents were asked whether they consider anything related to sustainability, when selecting fabric materials for remodelling. Table 4.16 depicts their responses.

Table 4.16: Responses on whether respondents consider anything related to sustainability when selecting fabric materials

		Freq(n)	Percent (%)	Valid Percent	Cumulative Percent
Valid	Yes	125	80.6	80.6	80.6
	No	9	5.8	5.8	86.5
	Not applicable	21	13.5	13.5	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field survey, 2020

From the analysis, 80.6% of the respondent chose yes whilst 5.8% chose no. This is an indication that majority of them consider anything related to sustainability when selecting fabric for remodelling. Here are some of the reasons given by those who chose yes: "*Because you have to consider the fabric to the extent that, if I bought this fabric, I will be able to use the excess for another work depending on the beautifulness and quality of the fabric material*"; "*In every business you need to sustain it, nothing should go waste not even pieces eg, local doormat can be made with pieces*"; "*Yes, because no one choses a fabric that they think it will not last. ln other words durability of the fabric is very much considered*"; "*It is very economical*"; "*Yes because anything sustainable is quality*"; "*Making sure remodeled designs conform with fashion of the day*"; "*Less spending better working materials*"; "*Meet current trend of fashion*"; "*It helps recycling and less environmental pollution*"; "*Some of the fabrics are timeless. It can be worn over and over again and it will never be out of fashion. eg the dashiki cloth used to be called " Angelina ". It's timeless*"; "*Durability and acceptability*"; "*In order to make affordable clothes/ articles for customers*"; "*To meet budget*"; and "*Yes, because you should check whether the dyes used is not harmful to both the sewer and the wearer as well as checking the biodegradable properties of the fabrics been used*"

The respondents were then asked whether they inculcate sustainability practice in their work, the responses can be found in Table 4.17.

Table 4.17: Sustainability practice

		Freq(n)	Percent (%)	Valid Percent	Cumulative Percent
Valid	Yes	126	81.3	81.3	81.3
	No	8	5.2	5.2	86.5
	Not applicable	21	13.5	13.5	100.0
	Total	**155**	**100.0**	**100.0**	

Source: Field survey, 2020

From the analysis, 81.3% of the respondents chose yes whilst 5.2% of them chose no. This is an indication that respondents inculcate sustainability practice at their work place. these are some of the reasons the respondents gave yes for their responses: "*Doormat is being made out of pieces"; "Patched cloth / dresses is also made out of pieces, we use designs in fabrics to design kitchen napkins, soft toys and now COVID-19 also taught us to make nose mask as well"; "Yes because, the excess been cut out are used for pillows and pillow case and also for sewing child's dress. Sometimes used for armrest"; "I try to make designs that would not go out of fashion. One that can be worn at all times and not feel out of place"; and "To prioritise environmentally friendly practices through production and making products that has low impact on the environment*".

4.3 Analysis of Interview

4.3.1 Demographic Characteristics of the Interviewees

Some of the demographic characteristics the study considered were gender, age cohort, educational level, number of years in the industry and the category of the industry they fall in. These were used to assess the kind of responses the respondents gave. All the five respondents interviewed were female with at least 16 years of fashion industry experience. The minimum qualification of all the five was Degree in fashion related course. The average age of all the five was 36-45 years. These feature means that the study sampled experience fashion designers for the interview.

4.3.2 Method for Remodelling

The respondents were asked about whether they remodel used clothes into new ones or not. Out of the five respondents interviewed, 3 of them responded affirmatively. The two who said they do not, were of the view that remodeled clothes take time and it is

expensive. They also said that not everyone likes remodeled clothes. One of them said that "*my customers do not request it*". One other respondent also said that "*they always want new material with new style*". Another said "*my customers are used to new fabrics*".

For those who said they do, they said they get the used clothes from "*secondhand clothing shops*", "*my own old dresses*" and "*my husband's shirt*". One of the three respondents mentioned that "*I buy them from friends*". It could be said that the industry players who remodeled used clothes get their material from secondhand clothing shops and from their households.

The researcher also sought to verify whether people come with their own used clothes for remodelling. From the interview responses, all the three respondents who practice remodelling said yes. One of the respondents said that "*someone brought his shirt to be remodeled into dress for his daughter*", another said that "*one celebrity brought her dress to change the style*". It could therefore be said that some of the customers bring their own used cloth for remodelling.

On the methods for remodelling, all the three mentioned "*cutting down*", "*combination of two or more materials*". Additionally, one of them mentioned "*patching and faggoting*". This is an indication that some of the remodelling methods were combination of two or more materials, patching and cutting down.

When they were asked to give some of the style they remodeled, some mentioned "*children dress*", "*arm rest*", "*chair bags*" and "*nose and face mask*". This means that most of them remodeled used clothes into children's dress, arm rest, chair backs and, nose and face mask.

4.3.3 Effect of remodelling of used clothes on the economic activities of the fashion industry

The third objective of the study was to assess the effect of remodelling of used clothes on the economic activities of the fashion industry. When asked do you have customers for your remodeled clothes, two of the respondents who do remodelling said yes and one said no. The respondent who said no, said that she only remodeled used clothes for the family only.

On the effect of remodelling on the fashion economy, one of the respondents said that "*it has low patronage*", "*most customers prefer new garments to remodeled clothes*", and "*its introduction into the market has been slow*". One other designer said that "*it is affordable*", "*it reduces waste*" and "*it encourages patronage of local fashion products*".

4.3.4 Sustainability

The interviewer asked the interviewees the effect of remodelling used clothes on the environment and they responded "*yes*". Here are some of the reasons they gave to their affirmation: "*material used are environmentally friendly*"; "*wastage of material is reduced*"; and "*less environmental pollution*".

On whether fashion house owners have particular material for remodelling, two of the interviewees said yes whilst one said no. To the one who said no, all materials can be used for remodelling. However, those who said yes, mentioned "*100% cotton*".

On how remodelling business can be sustained, one of the interviewees said that "*keeping customers patronizing all the time, avoid wastage of material, and recycling of used materials*". Another mentioned "*remodeled designs must conform with new fashion*". On what can be done to improve remodelling of used clothes, they all agree that it must be part of school curriculum.

4.3.5 To develop a framework for remodelling and renovating of used clothing in Ghana

The interviewees were asked about what can be done to improve on the remodelling of used clothes in Ghana. All the three mentioned that used clothes, unused clothes, oversize and unfit clothes should not be thrown away. One of them said "*customers should be encouraged to put their oversize and unfit clothes into reused by remodelling it into modern style".* They also made mention of education at the basic level as a means of improving remodelling of used clothes in Ghana. One of them was of the view that "*customers can practice basic remodelling like combination of two or more materials and patching in the house using thread and needle"*. Another interviewee said that *"industry players must be creative".*

4.3.5.1 Materials needed for remodelling

- Fabric (used or stain article)
- Needle and thread
- Pins

- Scissors and seam ripper
- Tape measure
- Sewing machine
- Tailor's chalk

4.3.5.2 Steps for remodelling used articles using cutting down methods

This can be done in two methods either by ripping off the seams or cutting through.

- Look for the used article to be remodeled; it should not be too worn out.
- When combining with another fabric make sure that fabric has the same grade as the used article.

Method 1: A lady's dress for remodelling a girl's dress using ripping off the seams

Plate 4.1a: Used dress
Source: Researcher's used article, 2020

- Rip the article

Plate 4.1b: Ripped article.
Source: Researchers ripped article, 2020.

- Wash and press all fold lines to be flat and smooth
- Mend and reinforce worn spot when necessary by using decorative stitches
- Cut out the style as if from new fabric keeping grain of fabric

Method 2: A man's shirt for remodelling a girl's dress using cutting through

Plate 4.2a: Used shirt
Source: Researcher's used article, 2020

- Do not rip to save time draw the intended design in the article and cut out

Plate 4.2b: Used shirt
Source: Researcher's construct, 2020

- Make sure to choose simple flat-well-made seams by locating the structural lines correctly and placket, hem, and facing should be well chosen and durable.
- Use conspicuous seams and stiches for joining to serve as decorative structural design.
- Press as you sew to improve the appearance of the remodeled garment.
- Remodelling an article can be done either by hand or machine

A remodeled girl's dress from Ripping off seams

Plate 4.3a: A remodeled girl's dress Researcher's design, 2020.

A remodeled girl's dress from cutting through

Plate 4.3b: A remodeled girl's dress Researcher's design, 2020.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

This chapter deals with discussion of the results from the analysis of the data. The chapter was organized based on the research objectives, which are; to establish different methods for remodelling used clothes by the fashion industry in the Kumasi Metropolis, to determine the effect of remodelling of used clothes on the economic activities of the fashion industry in Kumasi Metropolis and lastly to explore the sustainability practice of remodelling of used clothes by the fashion industry in the Kumasi Metropolis regarding their social and environmental practices.

5.2 To Establish Different Methods for Remodelling used Clothes by the Fashion Industry in the Kumasi Metropolis

The study's first objective was to establish different methods for remodelling used clothes by the fashion industry in the Kumasi Metropolis. However, it will be important to throw some light on the source of the materials for remodelling before diving into the different methods used. The findings revealed that, all the materials used for remodelling are sourced from local market with most of them coming from sellers of imported secondhand clothing followed by used clothes of customers and store rejects.

This is consistent with literature as supported by findings such as McDonough & Braungart (2013) argue that fashion waste is better converted to raw materials for nature or any other industry; Myers 2014 discovered that textile waste has the potential to be of great benefit in the eyes of a creative designer, perhaps even higher than its original shape (Kent & John-James 2018; & Han, 2013).

Kerr and Landry (2017) refer to such clothes as "End-of-use stage". According to them, End-of-use stage means the end of the product life cycle which creates a lot of waste. Tan (2016) realized that, some buyers reuse or are into recycle their clothing by selling them at second-hand shop or giving them to charity but the reality is that, a large portion of clothing become pure waste.

On the methods of remodelling, it was discovered that the owners of fashion houses used combination of two or more materials, patching and cutting down whiles most of the other respondents were using reshaping, combination of two or more materials, patching, beading, quilting and cutting down. The study established that, the methods above are in line with the three major steps simplified by LaBat and Sokolowski (1999), thus problem definition, creative exploration, and implementation.

This is well grounded in literature, as reiterated by many researchers such as Regan et al. (1998) who postulate that the method of design is important to agree on what is anticipated at each point between customers and re-designers, which will go a long way to minimize confusion or anxiety about the final outcome. Ulrich et al. (2003) believes it will offer consumers a personalized, local experience, and finally Fletcher (2008) argues that these remodelling methods free the imaginations of designers and ensure a customized result.

5.3 To Determine the Effect of Remodelling of used Clothes on the Economic Activities of the Fashion Industry in Kumasi Metropolis

The study also seeks to determine whether remodelling clothes have any effect on the economic activities of the fashion industry in the Kumasi metropolis. The fashion house owners confirmed that remodelling clothes are affordable according to customers,

reduces waste and encourages patronage of local fashion products. The other respondents also agreed with the assertions made in the responses with additions according to their experience with their customers thus it reduces waste, increase jobs, makes clothes affordable and also encourage the patronage of local fashion. From the findings it can be confirmed that, remodelling of clothes has the potential of boosting the economic activities of the fashion industry and the entire local economy in the Kumasi Metropolis.

This findings above are consistent with the works of the following researchers who also confirmed that remodelling of used clothes has far reaching positive effects on the local economic, social as well as the environment. Hansen (2008) and Grosse-Dunker and Reichwald (2009) confirm that remodelling introduces new challenges for Small and Medium-sized Enterprises (SMEs) especially in the fashion industry hence boosting economic activities, Zajkowska (2015) realized that in Poland, remodelling affect company's competitiveness both domestically and internationally. Although Araujo and Zonatti (2017) postulates that the key socio-economic and environmental benefits of fashion remodelling are linked to the training of labor and local income generation, Asante (2016) discovered that the promotion of new products began to boost the growth of the industry and raise awareness among the public.

Kent and John James (2018) realized that remodelling has the potential to contribute to economic growth by recruiting people to sell to established markets to make re-valued clothes and accessories. To a large extent, the study postulates that remodelling of used clothes leads to training and hiring of labor, local income generation, the population's awareness of consumption patterns, saving of natural resources and raw materials as well as mitigation of environmental impacts.

5.4 To Explore the Sustainability Practice of Remodelling of used Clothes by the Fashion Industry in the Kumasi Metropolis Regarding their Social and Environmental Practices

Competing wants of economic agents which has led to the depletion of natural resources vis a vis the increasing growth in global population as echoed in the UN development goals (UN Goal 12) has sparked interest in sustainability in recent times of which the fashion industry is no exception. The researcher based on the above explored the sustainability practice of fashion industry in Kumasi Metropolis as far as remodelling of used clothes are concern.

The study found out that fashion house owners practice sustainability by keeping customers patronizing all the time and recycling of used materials to avoid wastage. Again, remodeled designs must conform with new fashion. More importantly, respondents suggested that sustainability practices must be part of the school curriculum to inculcate sustainability practices into future fashion designers. The findings also revealed that majority of the respondents consider anything related to sustainability when selecting fabric for remodelling especially choosing 100% cotton materials. This is an indication that respondents inculcate sustainability practice at their work place.

The findings above are in line with strands of research in literature such as Wu & Li, (2019); Gazzola, Pavione, Pezzetti & Grechi, (2020), who accepted that by addressing environmental issues at the start of the value chain when clothing is made, sustainability leaders are more proactive. Furthermore, the BSR report (2012) stressed that, so far, sustainable fashion design has primarily concentrated on material selection, as a result

of which many brands have developed or are developing indices for that purpose. Again, Härtsiä (2017) argues that sustainability has become increasingly popular in the business world simply because people are now aware of how the future of the world, economies and communities will be impacted by these problems.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter which is the final chapter focuses on the summary of the findings, conclusion and recommendations of the study. The study took place in Kumasi Metropolis with all of the respondents coming from the fashion industry. The study covered the methods of remodelling, the economic viability of remodelling and how it could be sustained to give employable opportunity to the up-and-coming fashion industry players.

6.2 Summary of the Findings

This section was organized based on the objectives of the study. However, the demography features of the respondents cannot be overlooked. The demographic analysis shows more female who were within the age cohort 36-45 years on average in the industry. Most of them have the needed educational qualification and they have been in the fashion industry for at least 6 years. It was observed that most of the fashion industry players have the requisite knowledge on the subject matter.

6.2.1 To establish different methods for remodelling used clothes by the fashion industry in the Kumasi Metropolis

The study findings revealed that most of the fashion industry players practice remodelling of used clothes. The few who do not do remodelling of used clothes gave the following reasons: customers prefer new ones; and customers were ready to pay any amount you charge for a new cloth as compared to remodelling clothes. It was also revealed that all the materials used for remodelling are sourced from local market with

most of them coming from sellers of imported secondhand clothing followed by used clothes of customers and store rejects. The study discovered that the most of the industry players methods such as combination of two or more materials, reshaping, beading, quilting patching and cutting down in remodelling of used clothes.

The study established the following as some of the reasons why they used the methods mentioned: it prevents wastes; it beautifies and enhances clothes; it depends on what details the customers want; it is simple and easy to apply; it is innovative; it helps to resize the garment to a smaller size; it shows creativity; and it helps to revamp and create a new look out of the old.

6.2.2 To determine the effect of remodelling of used clothes on the economic activities of the fashion industry in Kumasi Metropolis

The study established that remodelling clothes were affordable, reduces waste and encourages patronage of local fashion products. The study also found that remodelling of used clothes increases jobs opportunities. The study found that patronage of remodelling clothes was high and it was due to the methods the designers used. Here are some of the comments of customers as stated by the industry players: nice work, I will come and sew another one later; good fabric; it looks new; excellent; satisfy their needs; and unique designs.

6.2.3 To explore the sustainability practice of remodelling of used clothes by the fashion industry in the Kumasi Metropolis regarding their social and environmental practices

The study found out that fashion house owners practice sustainability by keeping customers patronizing all the time and recycling of used clothes to avoid wastage. Again, remodeled designs must conform with new fashion. More importantly, respondents suggested that sustainability practices must be part of school curriculum to inculcate sustainability practices into future fashion designers. The findings also revealed that majority of the respondents consider anything related to sustainability when selecting fabric for remodelling especially choosing 100% cotton materials. This is an indication that respondents inculcate sustainability practice at their work place.

6.2.4 Framework of remodelling of garments

From the results and discussion, it could be established that remodelling can be made part of our every fashion life. The study therefore makes the following guidelines to ensure that remodelling of garment is sustained:

1. Used clothes, unused clothes, oversize and unfit clothes should not be dumped
2. There should be much education of remodelling of used clothes through the school system (ie. Formal and informal)
3. Basic remodelling methods such as combination of two or more materials and patching can be practiced in the home using thread and needle
4. Fashion houses, dressmakers, itinerant seamstresses and alteration seamstresses should be more creative to attract the general public especially the celebrities into remodelling as it will help reduce the importation of expensive clothes.

6.2.4.1 Steps for remodelling used articles

- Look for the used materials to be remodeled; it should not be too worn out.
- When combining with another fabric make sure that fabric has the same grade as the used articles.
- Do not rip to save time draw the intended design in the material and cut out.
- Wash and press all fold lines to be flat and smooth.
- Mend and reinforce worn spot when necessary, by using decorative stitches.
- Cut out the style as if from new fabric keeping grain of fabric.
- Make sure to choose simple flat-well-made seams by locating the structural lines correctly and placket, hem, and facing should be well chosen and durable.
- Use conspicuous seams and stiches for joining to serve as decorative structural design.
- Press as you sew to improve the appearance of the remodeled garment.
- Remodelling an article can be done either by hand or machine.

6.2 Conclusion

This study was on how to reform fashion sustainable future through garment remodelling. The study took place in Kumasi Metropolis with the responses coming from the fashion industry players. The study's demography was more of female with average age cohort between 36-45 years and with appropriate educational qualification. With the findings of the study, it is therefore concluded that fashion industry players use different remodelling methods and some of these methods found were combination of two or more materials, reshaping, beading, quilting patching and cutting down.

The study also concluded that remodelling of garments influences the economic activities of the industry since, remodelling clothes are affordable and reduces waste. It was also found that remodelling of used clothes encourages patronage of local fashion products. The study also established that remodelling of garments increases job opportunities.

Lastly, on sustainability, it was found that garments were recycled to avoid wastage and most of the fashion industry players inculcate sustainability practices into future fashion designers. It was found that in the industry, no piece of cloth is a waste since those pieces can be used for armrest, face and nose masks etc. It is therefore concluded that with the right methods of remodelling of garments, the future of the industry is highly sustainable.

6.3 Recommendations

Based on the findings, the study makes the following recommendations:

The researcher found out that remodelling of garments brings out the creative nature of the designers and it also shows how innovative the designers are. It is therefore recommended that the fashion industry players pay much attention to remodelling since it can boost the economic activities of the industry also the government should encourage fashion players s to practice remodelling of garments to encourage creativity in the industry.

The study also established that patronage of remodelling garments is on the increase. It was also found that remodelling gives job opportunities to some of the players in the industry to boost the economy of Ghana. It is recommended that remodelling should be

made part of all fashion activities to help provide jobs to the teaming youth of the country who are into fashion. It was found that remodelling of garments reduces wastage and encourages recycling of used garments to prevent environmental pollution. To sustain the future of remodelling of used garment, it is recommended that students and pupils should be allowed by their teachers or instructors to use their over age and unused clothes or articles to practice remodelling during clothing lessons in schools so as to inculcate the practice of remodelling in them.

Due to the economic viability of the remodelling of garments and its ability to give gainful employment to the youth to reduce unemployment. With remodelling ability to influence the environment positively by ensuring unused garments are not dumped indiscriminately into the environment, policy makers in our education set up are encouraged to ensure remodelling forms part of the clothing aspect of the pre-vocational skills curriculum. This will increase awareness on remodelling and its environmental effect.

6.4 Suggestion for Further Studies

The study's findings have provided much information about how fashion industry can be sustained going into the future through remodelling of garments. It is therefore recommended that academicians and students in the fashion industry study the outcome of this study and add to its findings by repeating it in other metropolis in the country.

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APPENDIX A

QUESTIONNAIRE

REFORMING FASHION'S SUSTAINABLE FUTURE THROUGH GARMENT REMODELLING: A CASE STUDY OF FASHION HOUSES IN THE KUMASI METROPOLIS

This questionnaire is meant to seek information on reforming fashion's sustainable future through garment remodelling. It is purely for academic purposes. Any response you give shall be treated with all confidentiality. Your honest responses will boost the success of this study.

Please mark (√) to indicate your preference

A. Demographic information

1. **Gender:**

   Male []

   Female []

2. **Age Group:**

   18-25 yrs []

   26-35 yrs []

   36-45 yrs []

   46-55 yrs []

   56+ []

3. **Educational Level:**

Degree in Fashion Related Course []

HND Fashion and Textiles Studies []

Advanced Fashion []

Intermediate Fashion []

NVTI Fashion []

Apprenticeship (certificate in Dressmaking) []

Any other (please specify) ……

4. **Number of Years in the Fashion industry**:

1-5 yrs []

6- 10 yrs []

11-15 yrs []

16-20 yrs []

Above 20 yrs []

5. **What category most characterize your work now**?

Itinerant seamstress []

Chief Apprentice of a fashion house []

Alteration seamstress []

Dressmaker []

B. Method for Remodelling

6. Do you remodel used clothes into new ones?	Yes □	No □
7. If "No" why?	…… ……	
8. If "Yes" where do you get the used clothes from? **Tick as many as applicable**	a. Imported secondhand clothes [] b. Home used clothes from consumers [] c. Store reject from fashion stores[] d. In-house innovation and other fashion houses [] e. From waste disposal agents [] f. Any other……..	
9. What method do you use to remodel the clothes? **Tick as many as applicable**	a. Beading [] b. Quilting [] c. Reshaping [] d. Dying [] e. Freshening up [] f. Combination of two or more materials [] g. Cutting down [] h. Others, specify …….	
10. Why do you used the method (s) chosen above?	……. ……. …….	

C. **EFFECTS OF REMODELLING ON THE ECONOMIC ACTIVITIES OF THE INDUSTRY**		
11. Are the customers patronizing your remodel clothes?	Yes □	No □
12. If "No", what are the possible reasons?	…….. …….. ……..	
13. If "Yes" what are the feedback you normally get	…… …… ……	
14. Is there any difference in the remodeled clothes and the one made from new garment?	Yes □	No □
15. State reasons for your answer	…… …… ……	
16. In your view, how will the remodeled clothes boost economic activities? **Tick as many applicable**	a. Reduce waste [] b. Increase jobs [] c. Makes clothes affordable [] d. Encourage the patronage of local fashion [] e. Can be exported to other countries []	

D. SUSTAINABILITY		
17. How do you understand the concept of sustainable fashion'?	a. Recycling [] b. Second-Hand [] c. Timeless [] d. Traditional Handcrafted [] e. Don't Pollute the Environment []	
18. When selecting fabric materials, do you consider anything related to sustainability?	Yes □	No □
19. Explain your answer above	…….. …….. ……..	
20. Do you inculcate sustainability practice in your work?	Yes □	No □
21. Explain your answer above	…… …… ……	

APPENDIX B

INTERVIEW GUIDE

REFORMING FASHION'S SUSTAINABLE FUTURE THROUGH GARMENT REMODELLING: A CASE STUDY OF FASHION HOUSES IN THE KUMASI METROPOLIS

This interview is meant to seek information on reforming fashion's sustainable future through garment remodelling/renovating. It is purely for academic purposes. Any response you give shall be treated with all confidentiality. Your honest responses will boost the success of this study.

Please mark (√) to indicate your preference.

A. Demographic information

1. **Gender:**

   Male []

   Female []

2. **Age Group:**

   18-25 yrs []

   26-35 yrs []

   36-45 yrs []

   46-55 yrs []

   56+ []

3. **Educational Level:**

   Degree in Fashion Related Course []

   HND Fashion and Textiles Studies []

   Advanced Fashion []

Intermediate Fashion []

NVTI Fashion []

Apprenticeship (certificate in Dressmaking) []

Any other (please specify) ……

4. **Number of Years as a Fashion Designer**:

1-5 yrs []

6- 10 yrs []

11-15 yrs []

16-20 yrs []

Above 20 yrs []

B. Method for Remodelling

6. Do you remodel used clothes into new ones? ……..
7. Where do you get used clothes from?
8. Do people come to you with their used clothes for remodelling?
9. What are some of the methods you used for the remodelling?
10. Can you tell us some of the style you make or the form it takes?

C. Effect of remodelling of used clothes on the economic activities of the fashion industry

11. Do you have customers for your remodeled clothes?
12. How does remodelling of used clothes affect the economy?

D. Sustainability

13. Does remodelling of used cloth affect the environment? If yes, how?
14. Do you have a particular material for remodelling?
15. How can the remodelling business be sustained?

E. Framework

16. What can be done to improve on the remodelling of used clothes in Ghana?