RECONSTRUCTING WASTE FABRIC PIECES INTO FASHIONABLE GARMENTS AND ACCESSORIES FOR THE GHANAIAN CONSUMER

Volume 4, March 2023 | Pages: 1 - 19
ISSN: 2665-0983 (ONLINE) | DOI: 10.35738/ftr.v5.2023.01

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ABSTRACT

This study explores the up-cycling possibilities of using left over pieces from local fashion houses that are not put into other end uses due to their relatively small sizes. The study, therefore, experiments with these waste materials by converting them into fashionable garments and accessories for the Ghanaian consumer as a way of curbing challenges associated with fabric waste management. The study employs fashion studio-based research approach by undertaking explorative research process in executing the works. Innovative exploration was used in converting waste fabrics especially African prints pieces into creating meaningful garments and accessories. The results of the study revealed a wide-range possibility of creating fashionable garments and accessories from these waste fabrics. The study identified that when pieces of this nature are properly arranged in term of colour, motif size and fabric weight and used in production of fashion related items, its acceptability and marketability prospects as revealed from the test conducted is as good as using any other fabric in garment production while extremely smaller pieces that cannot be crafted into any product on their own can be shredded and used as batting in quilt and other crafts. The study serve as means of reducing fabric waste that mainly end up in the landfills while it provides means for the young designers to produce creative and innovative designs from what otherwise might end up in the landfills.

Keywords: Up-cycling, African print pieces, Dress accessories, Garment construction and Waste fabrics.

1.0 INTRODUCTION

Clothes are part of the fundamental necessities of human beings. Every human use clothes in one way or the other mostly for adornment purposes. These clothes come in different designs, structures and styles. Designed fabrics in form of printed textiles are part of the most cherished fabrics used within the Sub-Sahara Africa region. Ghana had a long history for the production of printed fabrics. The art of printing on fabrics are done by applying colourants in definite repeated patterns on substrates. These arts are mostly done by depositing paste in various forms and treating them with steam or chemicals to improve on the adhesion properties with the textile materials (Tontora et al. 2009; Badoe et al, 2015). Prior to the 1960s when the locally known African prints were printed within the West African region in Ghana, Nigeria and Senegal specifically (Spencer, 1982: Abraham et al, 2015), the printed fabrics with the name African prints were printed in the Far East. The term was employed by the European textile firms to identify the fabric with Africans for their marketing purposes (Domowitz, 1992; Abraham et al, 2015).

Akinwuni (2008) revealed that African prints were initially introduced to the subregion by the Dutch, then later by European traders in wax fabrics while some African soldiers later brought home some batiks as souvenirs from Indonesia in the 1800s. Africans have now welcomed the idea of African wax prints being one of their indigenous products (Jennings, 2011). Ghanaians has also cultivated the idea of using the African prints to make casual wears instead of wearing them for special occasions as done during the olden days (Dogoe, 2013). These prints were promoted in recent time, partly as official-Friday wear in Ghanaian institutions (Ghana News Agency, 2004).

Few decades later, leftover wax prints were joined together to form a whole piece used as cover clothes for people with low income levels in Ghana with the household name as ''*asasa*''. It was a way by which the poor in society do have asses to cover clothes for use as the pieces collected and sewn together did not cost much compared with buying new clothes (Ghanarising.blogspot.com, 2013). Some textile companies in the country now produce prints that carries the concept of "*asasa*" by repeating existing fabric designs in prints using three or more designs in one printed fabric work. However, these did not fit into up-cycling of the print fabrics as it does not 'rebuild' with left over fabric pieces. Up-cycling activities involves the process of making new clothes from waste of previous worn garments or preformed finished clothing products (Redressdesignaward.com, 2021). Yalcin et al, (2019) stated that textile is one of the most important needs of human beings. Yalcin et al, (2019) further cited (Tortensson, 2011) who indicated that, when textiles is over consumed, they go all the way down to reduce the availability of raw materials as well as leading to the future environmental damaging. Therefore, the up-cycling approach of this study helps in sustaining the environment as fabric pieces are further process into other end uses to prolong their life span in usage.

According to Debbabi et al. (2014), wastes from fabrics are measured as one of the significant items due to its price tag. These authors further stated that, there have been numerous studies to find possible ways in the reduction of fabric waste such as the optimization of pattern marker, however, it could not totally prevent fabric waste. Africans generally have developed interest in the purchasing of more local prints which is geared toward upholding the African prints as one of their identity (Olshin, 2004) although, not all designs and imagery on fabrics deemed as African prints really represents the traditional expressions and philosophies of the true African identity (Akinwumi, 2021). This has led to the increase in demand of African prints and has also resulted into the increase in the sewing of these fabrics into fashionable styles by Ghanaians. As Ghanaians follow fashion and the desire to sew to fit the human figure increases, there is also a correlation increase in the production of waste generated from these African print fabrics. Reasons being that, some of the leftover pieces which can be used for other designs are not attended to, preferably because of their sizes. As the usual dumping of waste in Ghana, these fabrics therefore add up to the environmental pollution being experience all over the country. These leftover pieces are either burnt or thrown into landfill sites increasing environmental concerns (Sai et al, 2022). With a good up-cycling method, these pieces can be reconstructed into various designs and accessories.

Patchwork is a larger design fabric constructed from pieces of fabric put together by sewing (Debbabi et al, 2014). Paoletti & Jung (1987) mentioned that patchworks are mostly used for quilts works like blankets but can possibly be used for other clothing items such as bags, skirts, waistcoats and interior decors like wall hangings and cushion cover. Smaller pieces can equally be used as batting for staffing or padding quilts, and other projects. A creative construction using these pieces into garments and accessories will help reduce damping of these fabrics pieces into landfill (Sai et al, 2022). This study therefore sees the need to reduce the menace of fabric waste by adopting innovative ways to convert them into other fashionable end uses to provide additional income to designers in the field while reducing environmental concerns regarding waste management. The research intern to achieve this through these objectives; i. To design and construct garments and accessories from waste Africa print fabric pieces. ii. To evaluate the acceptability and marketability prospects of the items to be produced.

2.0 MATERIALS AND METHOD

A studio-based approach that employs explorative research methods was considered for the execution of this project. This becomes necessary to explore possible ways of making the best use of these waste materials by designing and fashioning items fit enough for the general public consumption. The main materials that were used for the study were pieces of fabrics (leftovers) from dressmakers, tailors and fashion designers that were no longer considered as valuable in their production line. These were mainly

fabric pieces that are approximately less than 7 inches square. Fabric types used for the study were mainly African prints from textile companies such as Ghana Textiles Printing Company (GTP), Akosombo Textile Limited (ATL) and Printex Limited among others. Most of these African print designs and motifs originated from the West African sub-region, although some similar designs are printed outside these countries especially coming from Asia country like China with lower price quoting, making them more affordable to the Ghanaian consumers. These cheap imported textiles have similarities in motifs and designs like the local ones thereby providing stiffer competition to the locally produce designs in terms of patronage. All these types collectively make-up the samples pieces collected for the study.

Study Design

The researchers developed a concept from the studio-based research with references to practice-based research approach by modifying diagram constructed by Nutting at the primary care methods conference, San Antonio, Texas in the year 2000. This diagram considered practice-based research approach as Identifying gaps; Searching for answers; Generating study questions; Designing the study; Analysing the data and implementing results (figure 1). Base on this model, the researchers adopt a modified model to address fabric waste generation by the local fashion houses and produce new designs from those waste materials. This involves identifying and collection of fabric pieces; sorting and grading into required sizes; cutting and shredding the fabrics into various sizes; joining and assemblage of pieces; design generation, construction and assessing acceptability and marketability prospects of the finish work as illustrated in figure 2.

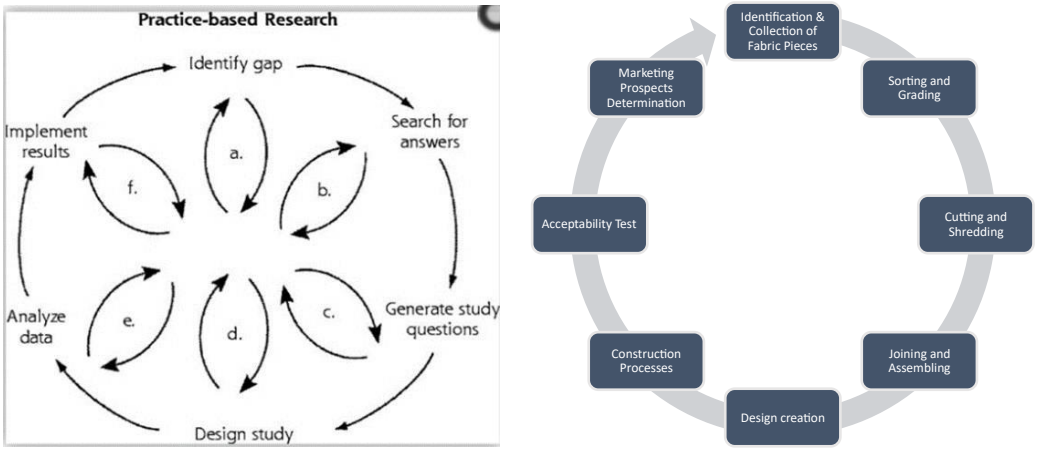


Figure 1 and 2: Model from practice-based research and Modified model for the research

Source: Nutting at the primary care methods conference, modified model adopted for this research work San Antonio, Texas in the year 2000

2.1 Collection: Twenty-two (22) fashion houses were identified through snowball techniques across the Tamale metropolis where researchers interacted with tailors and dressmakers to collect unused fabric pieces that are likely to be disposed of as rubbish. The researchers' observation indicated that fabric pieces lesser than 7inches squared are mostly not used by these designers again as their considered too small to generate any meaningful design concept. These forms the bulk of the sample pieces collected for the study.

2.2 Sorting and grading: this was done by grading the prints into various colour shades. The motif sizes were also graded by considering larger motif design, against medium sizes to smaller motifs, which are important in putting the fabric pieces together for stitching. Finally, the weight of the fabric pieces mainly resulting from fibre type and mode of fabric construction were also considered in the grading process using a modified version of 'silverbobbin chat' (Silverbobbin.com, 2022). This is to make sure all fabrics with similar weights and texture are put together in stitching to avoid unbalance weight effect in the design which can course pulling of the fabrics with heavier weights apart and seam slippage, a potential danger to the quality of the finish work.

2.3 Cutting and Shredding: the graded fabric pieces are then cut into four different sizes based on the original size of the pieces collected. This re-shape is done into 3 by 3 inches as the smallest size, then 4 by 4 inches, 5 by 5 inches and 6 by 6 inches.
After the re-shaping, the rest of the pieces which do not fit into the above sizes were shredded and used as batting in the quilt work with or without additional shredded pieces of foam for better sponge effect.

2.4 Joining and Assembling: the pieces in the various sizes were stitched together into large piece of fabric using an industrial sewing machine. The pieces were stitched into sizes big enough to cut patterns for the production processes. The assembling was done and the patterns cut from the pieces for sewing into the selected designs.

2.5 Construction process: After drafting the patterns pieces, they are laid out, cut out and stitched accordingly into the various articles being produced.

2.6 Acceptability and marketability tests: The final works were arranged and a panel of 35 fashion practitioners and consumers was formed to assess the acceptability level of the products by testing for finishing and aesthetic qualities, drapability, comfortability and strength properties. They equally assessed the market prospects of the same products with market price tagged in similar range to similar items sold in the open market. The entire assessment process took 10 days to complete.

3.0 RESULTS AND DISCUSSION

The results and discussions focus on the outcome from the African print pieces that were sorted out through analysis, the designed and constructed garments and accessories as well as the consumer acceptability and marketability test carried out on the prospects of the garments and accessories produced.

3.1 Grading of African Pieces

Fifty (50) samples of fabrics were selected for the exercise because, selection beyond 50 samples were showing lot of similarities in fabrics pieces collected from 22 fashion houses mainly in relation to colour and pattern as most African prints are of plain weave structure from cotton fibres. The background checked from these fashion houses indicated that, pieces that are quite large (10 to 12 inches larger or above) are most often used for other projects by the designers like sewing shorts, children's wear and combining some for larger projects, but pieces that are of maximum 7inches squared or lesser cannot be used effectively, hence are mainly disposed of into dustbins. The 50 samples sorted out were graded into three groupings as indicated in table 1.

Table 1: Grading of African prints pieces based on colour intensity, motif/pattern sizes and Yarn weight of fabric

Colour Intensity	Frequency	Percentage
High	20	40
Average	16	32
Low	14	28
Total	**50**	**100**
Motif/pattern Sizes	**Frequency**	**Percentage**
Large	10	20
Medium	36	72
Small	4	8
Total	**50**	**100**
Yarn Weight	**Frequency**	**Percentage**
Heavy	5	10
Medium	43	86
Light	2	4
Total	**50**	**100**

Fieldwork: June 2022

Note: the determination of the weight of fabric in this study is based on a modified version of fabric weights chart from www.silverbobbin.com.

From table 1 above, out of the 50 African prints pieces of varied designs, textures and colours assembled, 20(40%) of the African pieces had the highest records as having high intensity (bright), 16 representing 38% as moderately intense (neutral) and 14 as low in intensity (dull) which forms 10% of the samples. The results were the major factor considered in grouping the fabric pieces for stitching into larger sizes that can take the various parts of the patterns for the garments with fabrics within the range of 4 to 6 inches sampled. This enabled the researchers to assemble the printed fabric pieces into large pieces for the pattern cutting in these three grouping to bring about harmony in colour and motifs visible in the samples used for the study. According to Nicole (2013), illusion can be created depending on the brightness and dullness of a colour. She further indicated that, dull or dark colours seems to regress and thus making the figure appear smaller and the opposite affect bright or light colours. The table above indicates that 72% of the samples which is the highest were considered as having medium size patterns, 20% of the samples were also considered as having larger size patterns and the least being 8% which were considered as having smaller patterns. Koester (1993) also indicated that, the more difference, bigger and bolder a motif is, the more difficult the fabric can be used to one's advantage. Easter (2015) also added that large designs and flat stripes add volume whereas smaller prints and vertical stripes creates an illusion of reduction hence large motifs and brighter colours should be used for smaller figures as well as smaller motifs and darker colours should also be used for bigger figures. However, since the volume of small motifs in the pieces sorted are few, its blend into the blocks of pieces may not make any fashion statement. The medium and the large size patterns are worked into the three categories of colour grouping for the pattern preparation.

The result from the sorted African print pieces revealed that, 4% of samples were considered as thin or lightweight which falls in the category of 0-3oz per square yard fabrics which have fabric samples as netting, some lace types, voile, chiffon among others, 10% were also grouped as heavy-weight fabrics which in this study is modernized to cover fabrics in the range of 6-12oz per square yard which have fabric types in twill weaves, velvets, denim, corduroy among others. 86% of the pieces forming the majority is categorized under medium-weight which in this study is a modified version of the Silverbobbin chat and it covers fabrics in the weight region of 4-5oz per square yard having sample fabrics in this range as cotton knits, cotton shirting, muslin, linen and chambray which are common fabric types seen in African prints especially muslin and cotton shirting materials. According to Silverbobbin.com, (2022), the fabric weight is determined by the weight of 36-inches square section of a fabric or the density of a single fibre which are measured in ounces (oz) per square yard or grams (gm) per square yard. This study deals with pieces of fabrics which are not up to a yard length to make it possible to be measured in yardage hence the weight classification adopted is based on types of fabrics that falls under similar weight grouping in the Silverbobbin's chart used as reference point.

The researchers therefore eliminate the 10% weighty fabrics per the modified classification and grouped them separately for a different article if need be. This became necessary as their incorporation in the larger pieces in stitching will pull on the other fabrics in usage which may distort the shape of the fabric or cause the garments to pull and tear up more likely at those columns because of force and weight variations on the other pieces and the stitched thread. This indicates that the heavier or weightier fabrics cannot be stitched together with the thin and average weight fabrics as they may weigh down on the adjacent fabrics and cause pulling which might destroy the finished products easily by reducing their lifespans. In order instances, they can be grouped and used for one particular item of smaller size like the sandal straps or bow-tie, etc. Instances where the lightweight pieces types also seems to pose challenge due to the lightness of the fabric compared with the others, they were equally set aside for other group end uses. The sorting activities were carried out within the fashion houses as the designers who produced the waste are expects in fashion as well. However, the sorted pieces into these three categories were again examined and confirm by some five faculty members in fashion and textile department of Creative Design and Technology, here on Nyankpala campus of University for Development Studies.

3.2 Stitching Technique for the Pieces

The cut and analysed pieces that are grouped were arranged and stitched to form a piece big enough to cut patterns of the various parts of garments and accessories that were used for the study. Based on the results, groupings were done on which arrangement of the pieces were made for the stitching. The pieces were placed front to front and stitched with ¼ of an inch away from the edges to secure them with back tack at the ends for firmness. These are pressed open to ensure flatness of the assembled pieces as a collective whole ready for cutting into patterns for the garments and accessories as indicated in figure 3a and 3b respectively



Figure 3a and 3b: Fabric pieces stitched together and laid out ready for cutting into patterns

Source: Field work, June 2022: Researchers personal work

3.3 Garment Designing

The first step involved preliminary sketches of the garment designs. Ten different sketches were produced to enable the researchers select the five most suitable for the project. The selected designs were enhanced further using Adobe Photoshop Application Software to give a fair idea of the finished outlook as indicated in figure 4, 5, 6, 7 and 8.



Front view



Back View

Figure 4: Shirt with Mandarin Collar



Front view



Back view

Figure 5: Ladies Jacket



Figure 6: Bow- Tie



Figure 7: Lades Sandals

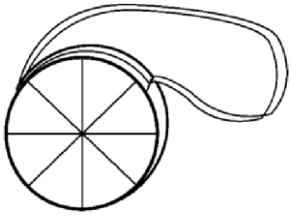


Figure 8: Ladies Side Bag

Source**:** Field work, June 2022: Researchers personal work

3.3.1 Drafting Patterns for the Garments and Accessories

The patterns were drafted out of the designs illustrated, by first taking measurement of persons the garments were being designed for.

3.3.2 Transferring Patterns onto the Fabric

The patterns were cut out, arranged on the fabric economically and all necessary pattern markings transferred unto the fabric with tracing wheel and carbon paper.

3.3.3.1 Putting the Garment Parts and Accessories Together (Sewing)

Sample A (Shirt with mandarin collar)

a) The front and back patterns were lined with underlining fabric.
b) The flap stitched and ironed on the front bodice.
c) The front and back bodice joined together at the shoulder lines.
d) The pockets for the front bodice were worked on.

e) The collar for the shirt was prepared and then attached to the neckline of the garment.
f) The sleeves were lined and attached to the armhole of the garment.
g) Both sides of the garment were joined together with machine stitches which is from the hem of sleeve through underarm and then, the side seams and lastly to the hemlines of the garment (shirt).
h) Lastly the buttons were fixed and final work well ironed.
i) The finished work is shown in figure 9a and 9b.

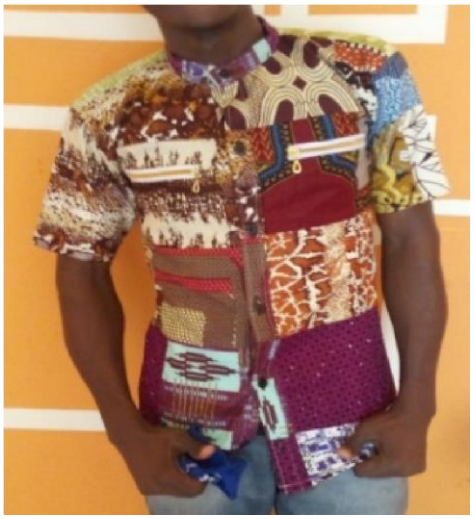


Figure 9a: Front view of a model Posed in Shirt with Mandarin collar



Figure 9b: Back view of model in Shirt with Mandarin collar

Source: Field work, June 2022: Researchers personal work

Sample B (Ladies Jacket)

a) The lining for the bodice was interface to give extra body to reinforce the blouse.
b) The front and the back bodice were lined.
c) The straps were prepared and sewn to the front bodice.
d) The darts for the front and the back bodice were worked on.
e) The neckline was neatened with a bias binding.
f) The front and back bodice were joined together at the shoulder line.
g) The sleeves were lined and joined to the blouse at the armhole of the blouse.
h) The sides were joined using machine stitches.
i) Flare for the garment was lined and joined to the waistline of the blouse.
j) The wrong sides were well neatened with neatening machine, turned and ironed.
k) The final product is shown in figure 10a and 10b.



Figure 10a: Front view of Ladies Jacket



Figure 10b: Back view of Ladies Jacket

Source: Field work, June 2022: Researchers personal work

Sample C (Pair of Ladies Sandals)

a) The patterns for the straps on the sandals have leather pieces cut and sandwiched within to provide strength for the top part of the sandal.
b) The straps were placed on fold and sewn.
c) The fabric-leather strap for the toe side and the one to be wrapped around the legs were fixed with adhesive to the sole.
d) An adhesive was applied to the under and upper soles to bind them together.
e) The sides of the sandals were stitched to enhance durability.
f) The finished product is shown in figure 11.



Figure 11: A view of the Ladies sandals

Source: Field work, June 2022: Researchers personal work

Sample D (Ladies Side Bag)

a) The handle for the bag was placed on fold, cut and stitched, then turned to the right side and ironed.
b) A cushion and a firm cardboard of the same sizes were sandwiched between the front and back patterns of the cut fabrics, covered with their lining to enhance stability.
c) A pocket was fixed on the lining of the front pattern with hand stitches.
d) The base of the bag was attached and sewn to complete the bag.
e) A zipper was fixed onto a stripe of fabric and attached to the opening of the bag.
f) The belt handle was joined to the sides of the bags.
g) The wrong edges were neatened with a neatening machine and turned in.
h) The finished product is shown in figure 12.



Figure 12: A view of the Ladies Side Bag
Source: Field work, June 2022: Researchers personal work

Sample E (Bow-Tie)

a) An interfacing was attached to the pieces by pressing.
b) The fabric was place on fold to be of the same size and sewn from one side of the edges to the other side leaving a small portion that was turned into the right side.
c) Ironed to remove the creases, then folded into pleats.
d) A strap was prepared to fold in the mid-section with pleat and stitched to form a bow as well as the strap being attached to wrap around the neck.
e) It is finish with a velcro sewn to the ends of the straps to provide ease in wearing around the neck.
f) The finished sample is shown in figure 13.



Figure 13: A view of the Bow- Tie
Source: Field work, June 2022: Researchers personal work

Sample F (Quilt Work)

a) The cut quilt patterns are stitched into the desired shape and design.
b) Creating Batting material from shredded pieces - the shredded pieces were spread evenly and sandwich between two lightweight interlining and ironed using presscloth (sample of Shredded pieces shown in figure 14a).
c) Then the batted material is top-stitched in zigzag manner at close intervals to further hold the shredded pieces firmly in place as seen in figure 14b.
d) A suitable backing fabric is selected for covering the back of the quilt, then the prepared bat is sandwiched between the shield fabric (quilt design) and the backing then stitched to specification with good finishing at the edges as seen in figure 14c

		
Figure 14a: Shredded fabric pieces	Figure 14b: Zigzag stitched of shredded pieces sandwich between interlining	Figure 14c: Shredded pieces fabric used as batting for this quilt made from waste fabrics

Source: Field work, June 2022: Researchers personal work

3.4 Acceptability Test

A panel of 35 members was composed, consisting of 15 textile and fashion design experts, 10 merchandisers of fashion and accessories goods within the Tamale metropolis and 10 consumers of fashionable goods. The panellists were asked to examine the acceptability level for all the six (6) products based on finishing, strength, comfortability, drapability and aesthetics for the Men's Shirt (MS), Ladies Jacket (LJ), Pair of Ladies Sandals (PS), Ladies Side Bag (LB), Bow-Tie (BT) and Quilt work (QW)

Table 2: Result of Acceptability Test

Acceptability Test	Products	Excellent	Very good	Good	Average	Poor
Finishing	MS	16(45.7%)	17(48.6%)	2(5.7%)	-	-
	LJ	22(62.9%)	13(37.1%)	-	-	-
	PS	25(71.4%)	8(22.9%)	1(2.9%)	1(2.9%)	-
	LB	18(51.5%)	14(40.0%)	3(8.6%)	-	-
	BT	23(65.7%)	12(34.3%)	-	-	-
	QW	17(48.6%)	13(37.1%)	5(14.3)	-	-
Drapability	MS	16(45.8%)	18(51.3%)	1(2.9%)	-	-
	LJ	22(62.9%)	11(31.4%)	2(5.7%)	-	-
	PS	25(71.4%)	8(22.9%)	2(5.7%)	-	-
	LB	17(48.6%)	13(37.1%)	4(11.4%)	1(2.9%)	-
	BT	18(51.4%)	14(40.0%)	3(8.6%)	-	-
	QW	20(57.1%)	5(14.2%)	10(28.7%)	-	-
Comfortability	MS	21(60.0%)	13(37.1%)	1(2.9%)	-	-
	LJ	20(57.1%)	12(34.3%)	3(8.6%)	-	-
	PS	26(74.3%)	7 (20.0%)	2(5.7%)	-	-
	LB	23(65.7%)	7 (20.0%)	5(14.3%)	-	-
	BT	22(62.9%)	12(34.3%)	1(2.9%)	-	-
	QW	24(68.6%)	8(26.9%)	1(2.9%)	-	-
Strength	MS	22(62.9%)	13(37.1%)	-	-	-
	LJ	20(57.1%)	15(42.9%)	-	-	-
	PS	21(60.0%)	13(37.1%)	1(2.9%)	-	-
	LB	22(62.9%)	10(28.6%)	3(8.6%)	-	-
	BT	22(62.9%)	11(31.4%)	2(5.7%)	-	-
	QW	20(57.1%)	10(28.6%)	5(14.3%)	-	-
Aesthetics	MS	19(54.3%)	14(40.0%)	2(5.7%)	-	-
	LJ	19(54.3%)	15(42.9%)	1(2.9%)	-	-
	PS	24(68.6%)	11(31.4%)	-	-	-
	LB	21(60.0%)	10(28.6%)	3(8.6%)	1(2.9%)	-
	BT	20(57.1%)	13(37.2%)	2(5.7%)	-	-
	QW	26(74.3%)	6(17.1%)	3(8.6%)	-	-

Source: Fieldwork, June 2022

The results from table 2 indicate that, there is great acceptance level for all the samples produced, using leftover print pieces from various fashion houses within the Tamale metropolis. A general outlook of the results in respect to grading within excellent and very good shows that, comfortability is highly considered within the five thematic areas considered for the assessment, followed by strength of the various products, then aesthetic, finishing before drapability. However, it is only one (1) respondent among the panellists that scores the Ladies bag as average on its aesthetic and drapability, another one also rated the pair of ladies' scandals as average for its finishing while two (2) others rated average for comfortability associated with quilt work with no respondent considering any of the products as poor. This is an indication that the overall acceptance level of the products is good. The acceptability rating generally gives the impression that, leftover fabric pieces from fashion houses which are discarded and finally end up in landfill sites, adding to the larger pollution and environmental concerns can partly be reconstructed into fashionable items for use with good market value. This is equally examined by testing the suitability of marketing these items.

3.5 Marketability Prospects of the Items

Marketability prospects of the products were also assessed by the panel members to determine their level of willingness to purchase any of the products especially if it has a good price-quality. From tables 3 and 4, it show that all the 35 panel members are willing to buy the products if available for purchase. This implies that, the prospects of the products and similar products if designed and constructed well will likely have a good patronage level in the Ghanaian market.

Table 3: Marketability Prospect of the products based on pricing for MS, LJ, PS, LB.

Products	Panels Responds to the products on Pricing										Total	
	GHS (10-20)		GHS (21-30)		GHS (31-40)		GHS (41-50)		GHS (51-70)			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
MS	1	2.9	6	17.1	17	48.6	5	14.3	6	17.1	35	100
LJ	1	2.9	6	17.1	19	54.3	7	20.0	2	5.7	35	100
PS	4	11.4	23	65.7	5	14.3	2	5.7	1	2.9	35	100
LB	-	-	6	17.1	21	60.0	7	20.0	1	2.9	35	100

Source: Field work, June 2022

Table 4: Marketability Prospect of the products based on pricing for QW, BT.

Products	Panels Responds to the products on Pricing										Total	
	GHS(70-100)		GHS(101-130)		GHS(131-160)		GHS(161-190)		GHS(911-220)			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
QW	3	8.6	6	17.1	17	48.6	5	14.3	4	11.4	35	100
	GHS(01-04)		**GHS(05-10)**		**GHS(11-15)**		**GHS(16-20)**		**GHS(21-25)**			
BT	-		7	20.0	21	60.0	6	17.1	1	2.9	35	100

Source: Field work, June 2022

Also, aside the willingness to purchase such items, an average market price of the various products were provided to serve as reference point for pricing the products as seen in the two tables above. Since the items were composed from fabric pieces, the concept of Assoune, (2022) on pricing fashion items of pre-loved clothes using an average 30% to 40% of the original retail price of the product. An African print lined shirt and jacket had an average price of GHC 60.00 each, but the products from this project were paid at GHS 40.00 each. The pricing of the other items from the project were based on 30% reduction on the original retail price of such items in the market. The pair of sandals was priced at GHS 35.00 on average, an African print side bag was pegged at GHS 20.00; the bow-tie was priced at GHS 10.00 on average while a quilt of this size make of African print goes for GHC 200.00 in the open market but was cost for GHS 150.00 on the average for this project. Based on these pricing knowledge for similar items in the open market, price ranges were built with 30% deduction of original retail prices to assist the panel members determine at what price they will be willing to buy any of the six (6) items produced. From the results, an average of 23 panel members were willing to pay between GHS 20.00 – GHS 50.00 for the men's shirt, 28 panellists said they will pay a range of GHS 31.00 – GHS 50.00 for the lady's jacket. In reference to pricing for the side bag, 29 panel members prices range between GHS 20.00 – GHS 50.00.

Details from table 4 shows that, out of the 35 panellists, 27 are ready to pay between GHS 100.00 – GHS 200.00 for the quilt work while in relation to the bowtie, 20 panellists said, they will pay within the range of GHS 10.00 – GHS 20.00 for it. This shows that the possibilities of selling these and similar items in the market is great and possibly have an average over others in terms of pricing similar items in the market place. It is an indication that, if the designs can consider utilizing these fabric wastes effectively and efficiently, they will be saving the planet earth while adding more money into their pockets.

4.0 CONCLUSION

The exploration on the use of fabric pieces to add value and create more innovative items has been successful in this regard. Cutting, combining various fabric designs and sizes into a single piece of fabric to enhance pattern cutting from the work needs some precision for a good outcome. If fabric pieces are well combined and arranged as in the quilt pattern, it can provide desirable results to improve on skills in the textile and fashion sector for small businesses. Generally, our environment can be improved and get rid of textile waste to some extent with ideas and items that little by little contribute significantly to long term sustainability issues of the ecosystem of our planet for future generation. Evidence of zero waste achievement from fabrics usage can be obtained if the extremely small units from fabrics left as waste can be used as stuffing materials for products as used in batting for the quilt in this project.

RECOMMENDATION

The fashion designers, dressmakers and clothing and textile students should consider making use of leftover fabric pieces since it can provide Job Avenue and bring profit instead of them being discarded and this will equally improve on the creativity skills of these students and designers. Further study in shredding of fabrics and converting them into other products in paper and sheet forms worth exploring into as further study. Results of the sponginess of the quilt will be better if the shredded fabrics are combined with shredded forms to reduce the total weight of the quilt which needs considering in similar projects in the future.

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