



Acceptability of Recycled Waste Fabrics for Production of Articles for Teenagers

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Abstract. The study investigates the acceptability of recycled waste fabric for production of articles for teenagers in Ondo State, Nigeria. The study was guided by four (4) research questions. The design adopted for this study is descriptive survey and research and development research designs. Purposive sampling technique was used to select 98 mothers as respondents across the twelve (12) wards using 0.1% of their population respectively. The research instrument used was a structured questionnaire designed to elicit information from respondents by the researcher. Findings from the study revealed that recycled fabric waste is an act of recapturing economic value, recycled fabric waste prevents fabric wastage in clothes construction, recycled fabric waste reduces environmental pollution and recycled fabric waste is meant for parents with low socio-economic status. The study concluded that differences in values, beliefs, social status, and lack of clear regulation are challenges to be encountered in the usage of recycled waste fabric. The study recommends fostering positive attitudes towards recycled fabrics and government support to promote recycling initiatives.

Index Terms- Acceptability, Recycled, Waste Fabric, Articles, Teenagers

I. Introduction

Clothes are of great importance to all human beings; it is one of the basic needs of any person and are important in determining the impression a person makes on others whether it is attractive or functional. Clothing is not just a passive cover for the skin, it also interacts with and modifies the heat transfer, thereby regulating the temperature of the skin. (Ozougwu, 2018). Consequently, clothing and textile industries keep on growing as the human population increase and are currently among the largest and fastest growing industries which have become a force to reckon with. The “fast fashion” trend and high consumer demand for fashion have led to a huge expansion in the production and consumption of clothing. (Sobij, Khan & Habib, 2021). This in turn has led to enormous amounts of fabric waste being generated annually and disposing of such huge amount of waste is becoming a bigger issue.

The clothing industry faces new challenges with increasing scrutiny for its environmental and social impacts. Worldwide, an estimate of 60million kilograms of textiles and footwear is disposed by either burning or dumped into landfills every year. (Adetiloye, 2018) and also as predicted by Shiruanimoghaddam, Mojamed, Ramakirishna & Naebe (2020), the amount of global textile waste would rise by 60% annually, adding extra 57 million tons of waste per year to reach a total of 148 million tons per year between the year 2015 to 2030. In Nigeria, it has been observed that the



rapid growth of fashion trends, aso-ebi trends and construction of fabric into fashionable clothes by fashion designers and dress makers generate a great quantity of off-cuts or remnants which are packed up to occupy space at the workshops with the intention of finding usage for them. Eventually, the remnants are considered as scraps when no reasonable application is found and are disposed either by burning, burying or dumping at landfills. (Adelaide, Quansah & Acquaye,2022). The mode of disposal of these wastes hence become a challenge to the environment in form of pollution which is hazardous to human health and to clothing and textile industries.

This Clothing and Textile industry challenge has prompted several government, NGOs and individuals passionate about the environment to now emphasize sustainable practices to alleviate the climate crisis and environmental impact of textile waste. One of the sustainable practices is to recycle fabric waste. Recycling is hence one of many solutions the clothing and textile industries all over the world use to reduce the negative contribution imposed by the production of textiles. (Udeani, 2017). Hence, the major reason why fabric needs to be recycled just like bottles. Recycling these wastes may drastically reduce pollution in the society which are dangerous to the health of the individuals in the community.

Recycling is the process of collecting, sorting and reuse of fabric waste. The essence of recycling is to eliminate waste in the market of used textiles, textile waste creates job opportunities mainly in sorting and second-hand sales while increasing the resource efficiency within the clothing articles. The voluntary commitment is not a voluntary system for producer responsibility and does not replace other measures for a more sustainable management of textiles by a girl child. Recycling of textile waste is aimed at eliminating pollution, and illegal collection, export and trading of post-consumer textiles, increasing transparency on the fate of collected textiles and the purpose of the collection and increasing public confidence in collecting organizations. Waste fabrics are unused clothing articles that occurs during clothing construction. Recycling is also a very crucial aspect in clothing construction which serve as a means of collecting and sorting used ones for other consumers. Garments are important to life no matter the age, and as soon as a child begins to express the likeness to wear cloths, he/she is expressing his/her individuality (Ozougwu, 2018).

A teenager is an individual at the age before becoming a young adult. This period covers the crèche, nursery or early childhood (0-5 years), primary (6-12 years) and secondary school (12-18 years). During this period, the young child is totally under the care of the adult parents or guardians and older siblings. It is made up of infancy, childhood, early and late adolescence stages of development. During this period, the child is malleable, builds and develops her personality and character. The girl-child is very dependent on the significant others, those on whom she models her behaviour, through observation, repetition and imitation. Her physical, mental, social, spiritual and emotional developments start and progress to get to the peak at the young adult stage (Raul, 2016).

The textile recycling system is controlled by a multitude of stakeholders seeking to recover and divert textile waste from landfills, to put it back to use, capturing economic value, utilizing materials at hand and reducing environmental



impact. These stakeholders range from fashion industry insiders including, designers, manufacturers, educators and academics, charity resale organizations, private textile recycling brokers, municipal solid waste entities, state and federal governments. There is no gainsaying that girl child is yet to develop good attitude towards the use of recycled waste fabric in the production of clothing articles. This study therefore examines acceptability of recycled waste fabric for production of articles for teenagers in Ondo City.

Statement of the Problem

Clothing sector is one of the most wasteful sectors in the world due to its rapid manufacture and supply of clothing's and the second highest waste consumption after agriculture. According to several studies, the world-wide textiles sector produced over 92 million tons of textile waste in 2014 of which only a small fraction was recycled or reused, and a large portion was disposed of in landfills or burned. An investigation reveals the constructs of consumer creativity fashion conscious and environmental concern and it works at the connections between these factors and consumer interest in upgrading techniques and upcycled clothing purchase. Strong economic motivations for developing new techniques to recycle excess or unused textile material rising costs connected with the availability to raw resources and steadily rising textile product usage. At "cut and sew" factories and shops where clothing is produced, significant volumes of textile waste, clippings and loose sample scraps are produced. These textile trimmings and scraps become garbage and are dumped in landfills unless they are recycled into valuable products. Recycled waste fabrics provides a sustainable alternative for garment production and despite the potential of recycled waste fabrics to address these issues, the acceptance and adoption of such materials in the production of articles for the girl-child remain largely under explored in Nigeria.

Purpose of the Study

The main purpose of the study was to examine the acceptability of recycled waste fabric to produce articles for teenagers in Ondo City of Ondo State. Specifically, the study.

- assessed the level of acceptability of recycled waste fabric in the production of clothing articles.
- examined the possible factors that influence the choice of clothing articles from waste fabrics for teenagers.
- identified challenges to be encountered in the usage of recycled waste fabric.
- documented the possible solutions to the challenges encountered in the usage of recycled waste fabric.

Research Questions

The following research questions guided the study.

- What is the level of acceptability of recycled waste fabric in the production of clothing articles?
- What are the possible factors that influence the choice of clothing articles from waste fabrics for teenagers?
- What are the challenges to be encountered in the usage of recycled waste fabric?
- What are the possible solutions to the challenges encountered in the usage of



recycled waste fabric?

II. Methodology

1. Research Design

Descriptive survey design was the research design adopted for this study. It is adopted because it does not manipulate responses of respondents and it is concerned with describing and interpreting opinions, ideas and facts as expressed by respondents. This design was suitable for this study because it essentially determined how the independent variables (Acceptability and Recycled Waste Fabric) influenced the dependent variable (Production and Articles) among teenagers in Ondo City.

2. Area of the Study

The Area of the study is Ondo City of Ondo State, Nigeria. Ondo city is a trade center for the surrounding regions where yams, cocoa, cotton, cassava, grains, kolanuts, tobacco, are grown. It is the largest producer of cocoa products used in the production of beverages. It has an area of 970km² and a population of 283, 672 at the 2006 census. The postal code of the area is 351.

3. Population of the Study

The population of the study comprised of Female children in Ondo West Local Government Area in Ondo State. The total population of mothers is 98,304 and adolescents is 101,348. (National Population Commission, 2006)

4. Sample and Sampling Technique

Purposive sampling was used in selecting female respondents across the twelve wards in Ondo City. The sample size for this study were ninety-eight (98) mothers and one hundred and one (101) teenagers were selected in all using 0.1% percentage of their population respectively.

5. Instrument for Data Collection

The research instrument used for this study was a structured four likert scale questionnaire which was designed to elicit information from respondents by the researchers. The questionnaire consisted of five sections. Section A consisted of personal information of the respondents while Section B consisted of fixed response on the level of acceptability of recycled waste fabric in the production of clothing articles, Section C consisted of fixed response on the possible factors that influence of clothing articles for a girl child, Section D consisted of fixed response on the challenges to be encountered in the usage of recycled waste fabric and Section E consisted of fixed response on possible solutions to the challenges encountered in the usage of recycled waste fabric.

6. Validity of the Instrument

The instrument was subjected to both face and content validation by the three lecturers in the Department of Home Economics, Adeyemi College of Education, Ondo. Their suggestions and necessary corrections were effected on the instruments.



7. Method of Data Collection

One hundred and ninety-nine (199) copies of questionnaires were produced: ninety-eight (98) copies for mother and one hundred and one copies (101) copies administered personally to the respondents and the filled copies of the questionnaire were collected immediately to avoid loss in transit.

8. Method of Data Analysis

The data collected were analysed using Frequency Count Mean (X) and Standard Deviation (SD)

Decision Rule: The decision rule on the findings was guided by using mean score of 3.00 as cut-off point. Items with mean score of 3.00 and above are accepted as agreed factors while those that fall below 3.00 were regarded as disagreed factors.

Research Question 1: What are the level of acceptability of recycled waste fabric in the production of clothing articles?

Table 1: Mean and standard deviation responses of respondents on The level of acceptability of recycled waste fabric in the production of clothing articles

| S/N | The level of acceptability of recycled waste fabric in the production of clothing articles | N=98 C =3.00 | | |
|-----|--|--------------|-------|---------|
| | | X | SD | Remarks |
| 1. | Development of recycled technology has allowed the fabric industry to produce vast amounts of products that deplete natural resources. | 3.65 | 1.191 | Agree |
| 2. | Recycled fabric waste helps fashion move towards sustainability by saving energy. resources and capture economic value | 3.97 | 1.023 | Agree |
| 3. | Charitable organizations and businesses created create specially make collection bins that allow the public to dispose of post consumer waste that it can be raised. | 3.64 | 1.102 | Agree |
| 4. | Recycling of textile waste is a requirement for the implementation of a circular model which helps to ensure sustainability and reduce environmental impact | 3.68 | 1.123 | Agree |

Mean greater than cut off point (3.0) accepted as agreed

Key:-N- number of respondents,, c-cut off points, X- Mean response of all respondents, standard deviation



Table 1 revealed that mean response on items 1-4 ranging from 3.64-3.97 and were greater than the cutoff point, hence, respondents agreed to the items statements.

Research Question 2: What are the possible factors that influence the choice of clothing articles for a girl-child?

Table 2: Mean and standard deviation of respondents on possible factors that influence the choice of clothing articles for a girl-child.

| S/N | Possible factors that influence the choice of clothing articles for a girl-child | N=98 C =3.00 | | |
|-----|---|--------------|-------|---------|
| | | X | SD | Remarks |
| 1. | The social and cultural factors surrounding the use of waste fabric in the production of dress affect family decision about recycled waste fabric | 3.77 | 1.032 | Agree |
| 2. | The desire and interest to purchase any recycled waste fabric depend on the financial ability of the family | 3.66 | .875 | Agree |
| 3. | The fabric waste materials and how it interacts with the body affects the choice of recycled fabric waste | 3.88 | 0.231 | Agree |
| 4. | Environment and religion influence the choice of recycled fabric waste | 3.60 | 0.121 | Agree |
| 5. | Durability is very important in girl child for subsequent use | 3.55 | 0.123 | Agree |

Mean greater than cut off point (3.0) accepted as agreed

Key: -N- number of respondents, , c-cut off points, X = Mean response of all respondents, standard deviation

Table 2 revealed that mean response on items 1-5 ranging from 3.55-3.77 and were greater than the cut off point, hence, respondents agreed to the items statements

Research Question 3: What are the challenges to be encountered in the usage of recycled waste fabric?

Table 3: Mean and standard deviation responses on challenges to be encountered in the usage of recycled waste fabric

| S/N | Challenges to be encountered in the usage of recycled waste fabric | N=98 C =3.00 | | |
|-----|---|--------------|-------|---------|
| | | X | SD | Remarks |
| 1. | Lack of skillful production, structure and preservation of recycled of fabric waste | 3.73 | 0.123 | Agree |
| 2. | Fabrics are sometimes damaged in the process and so cannot easily be reused | 3.28 | 1.023 | Agree |
| 3. | The significant differences in religious belief and practice determines the | 3.65 | 0.123 | Agree |



| | utilization of recycled waste fabric | | | |
|----|---|------|-------|-------|
| 4. | Different perspectives, individual differences may affect the usage of recycled waste fabric | 3.43 | 1.231 | Agree |
| 5. | Social status and aspirations of individual influence their choice and acceptability of recycled waste fabric for their family members | 3.43 | .123 | Agree |
| 6. | Some individuals have the belief that the usage of recycled waste fabric in the production of clothing articles is meant for low class people | 3.65 | .210 | Agree |

Mean greater than cut off point (3.00) accepted as agreed

Key:-N- number of respondents, C=Cut off points, SD= standard deviation response of all

The data presented in table 3 show the mean responses of the ranging from 3.43-3.87. this indicate that the respondents in item 1, 2, 3 and 4 respectively agreed with the item on the possible factors that influence the choice of clothing articles for a girl- child

Research Question 4: What are the possible solutions to the challenges encountered in the usage of recycled waste fabric?

Table 4: Mean and standard deviation responses on possible solutions to the challenges encountered in the usage of recycled waste fabric

| S/N | Possible solutions to he challenges encountered in the usage of recycled fabric waste | N=98 C =3.00 | | |
|-----|---|--------------|-------|---------|
| | | X | SD | Remarks |
| 1. | Implementing standardized recycling process would reduce contamination and improve the quality of recycle fabric waste. | 3.42 | .0212 | Agree |
| 2. | More sensitization and awareness would increase the demand for recycled fabric waste | 3.46 | 1.123 | Agree |
| 3. | Government incentives and subsidies would encourage businesses to invest in recycle fabric waste. | 3.59 | 0.912 | Agree |
| 4. | Producing items with great aesthetic appeal will encourage patronage of recycled fabric waste products. | 3.54 | 123 | Agree |

Mean greater than cut off point (3.0) accepted as agreed

Key:-N- number of respondents, c-cut off points, X = Mean response of all respondents, standard deviation

The data presented in table 4 show the mean responses of the ranging from 3.42-3.59. this indicate that the respondents in item 1, 2, 3 and 4 respectively agreed



with the items on the challenges to be encountered in the usage of recycled waste fabric

III. Discussion of Findings

This study consisted of all teenagers and mothers in Ondo West Local Government Area in Ondo State which were about 283,672 at the 2006 census. Most of the respondents were from monogamous family. Recycled fabric waste helps fashion move towards sustainability by saving energy, resources and capture economic value, charitable organizations and businesses make collection bins that allow the public to dispose of post consumer waste that it can be raised, recycling of textile waste is a requirement for the implementation of a circular model which helps to ensure sustainability and reduce environmental impact. This was in accordance with Hawlay (2014) who opined that waste generated by the textile sector contributes to land, water and air pollution. Decomposing textiles generate greenhouse gases and thus air pollution. The vast amount of chemicals used for producing textile goods unavoidably pollutes the rivers. And discarded textile products fill up landfills, which are already scarce. All these wastes are resources that could have been used to create value-added products. Not only this potential is lost, but also more raw materials are required to be used, which in turn results in more energy to be consumed.

The possible factors that influence the choice of clothing articles for a girl-child are as follows social and cultural factors surrounding the use of waste fabric in the production of dress affect family decision about recycled waste fabric, the desire and interest to purchase any recycled waste fabric depend on the financial ability of the family, the fabric waste materials and how it interacts with the body affects the choice of recycled fabric waste, environment and religion influence the choice of recycled fabric waste, durability is very important in girl child for subsequent use. This was in accordance with Gurel, (2015) who opined that colours can make a person feel cooler or warmer, look bigger or smaller. White and light colours are cool red orange and black make a person feel warmer because they absorb light. These points should be borne in mind when choosing fabric to wear at different times of the day or the year. Colour seems to add or subtract from size, red and yellow are called advancing colours, they bring a person closer and seem to make a person larger. Blue is a receding colour and makes an object seem to be farther away and therefore smaller. Colour of the skin must be considered with choosing fabric to make a garment. The skin tone contains varying amount of brown-beige tinge. Choose a colour in contrast to the skin and not the one that will match it. Choose light pastel shades of blues, mustard, pink, light turquoise and light new leaf green. White stands out more on a dark coloured skin though colours are usually chosen to enhance the beauty of the face, their effect on the figure must not be forgotten. The tall, well-proportional figure can wear almost everything.

The challenges to be encountered in the usage of recycled waste fabric include Lack of skillful production, structure and preservation of recycled of fabric waste, individual differences may affect the usage of recycled waste fabric, social status and aspirations of individual influence their choice and acceptability of recycled waste fabric for their family members and some individuals have the belief



that the usage of recycled waste fabric in the production of clothing articles is meant for low class people. This was in accordance with Raul, (2016) who opined that wasted materials can be recovered through reusing a product as is and converting the waste into a product. A material should get to be reused as much as possible and the consumer finally decides to discard it, and then recycling would be a good alternative to reduce the carbon footprint. Recycling approaches tend to be divided into primary, secondary, tertiary and quaternary approaches, and all these four methods are applicable to recycle fibers. Primary approaches refer to the process of recycling a material to what it was originally. Secondary recycling means melt processing a plastic product into a lower-quality but nevertheless a new one. Tertiary recycling refers to processes that convert the plastic wastes into basic chemicals or fuel, such as pyrolysis and hydrolysis. Quaternary recycling involves burning the fibrous solid waste and converting it into a source of energy exploiting the heat generated through burning

Possible solutions to the challenges encountered in the usage of recycled fabric waste include The social and cultural factors surrounding the use of waste fabric in the production of dress affect family decision about recycled waste fabric, the desire and interest to purchase any recycled, waste fabric depend on the financial ability of the family, the fabric waste materials and how it interacts with the body affects the choice of recycled fabric waste and environment and religion influence the choice of recycled fabric waste. This was in accordance with Hones, (2004) who opined that repair is a method of taking an item, which may appear to have lived its useful life, and fixing it so that it can still be productive. Remanufacturing and refurbishing are ways of taking some used components and some new components to "rebuild" an item.

IV. Conclusion

Based on the findings of this research work, the researcher consider it worthwhile to conclude as follows; recycled fabric waste is an act of capturing economic value, recycled fabric waste prevents fabric wastage in clothes construction, recycled fabric waste reduces environmental pollution, people consider recycled fabric waste as inferior articles and recycled fabric waste is meant for parents with low socio economic status and lack of skillful production, structure and preservation of recycled of fabric waste, religions differences, differences in values, differences in beliefs, social status and aspirations and lack of clear regulation are challenges to be encountered in the usage of recycled waste fabric

Recommendations

Based on the findings and conclusion from data collected and analysed, the following recommendations were made;

- Government should collaborate with textile and product designers to create trendy, eco-friendly products that appeal to teenagers.
- parents and teenagers should develop good attitude towards the use of recycled fabric waste.



- There should be proper sensitization on recycling to increase awareness on sustainable fashion
- Support for research and development of new products from fabric recycling.

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