Youth Empowerment through Recycling of Textile Products in Kenya.

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Abstract

Global statistics show that growth of apparel market from 2012 to 2017 is on upward trend. It is thus estimated that apparel market increased by approximately 5.46 percent in 2017 compared to 2016. Fast fashion has thus taken Centre stage with improved global economic levels. Consequently, millions of metric tons of used clothes and textiles are available annually especially from the developed nations. While the majority of these clothes end up in landfills, a considerable size is exported to markets in developing countries. When the apparels and clothing are worn out, they cause environmental pollution on disposal. Textiles particularly present problems in landfill as synthetic products do not decompose, whilst woolen garments decompose and produce methane, which contributes to global warming. However, recycling of these apparels and textiles can be used not only to solve the problems of environmental pollution, but also to provide an economic opportunity for millions of jobless youths in the developing world as well as clearing and forwarding from our houses. In Kenya, recycling industry is developing fast. This study sought to establish ways through which the youth in Kenya could take advantage of this large resource to create employment, the source of used clothes used as raw materials in the recycling industry, items made from recycled clothes and finally the movement of these products in the market. Results showed that the recycling industry in Kenya is dominated by handcrafts, skills men and women and that they are mainly done on small scale. Most of the enterprises sampled in this study were family owned and employed less than 20 people. Items produced included Ciondos (local Kenyan baskets), dusters, moppers, pupils' school bags and floor mats. These products are sold in local supermarkets and open-air markets by vendors around the cities and major towns in the Kenya. Prices depended on quality, size of items and target market. Most enterprises reported making between Ksh. 20,000 and Ksh. 40,000 monthly depending on production. It is recommended that the government through the ministry of youth should empower entrepreneurs through training on new technology, financing and provision of tools and equipment to support recycling industry.

Keywords: Textile Products, Textile Recycling, Youth Employment, Empowerment Postconsumer Waste.

Introduction and Study Background

Banerjee, Tripathi and Sahay (2016) estimated that in 2017, the apparel market increased by approximately 5.46 percent compared to 2016. In 2009, Cororaton & Orden (2008) observed that the total textile fibre demand increased by 0.4% to 65.1 million tons while in 2010, total textile fibre demand increased by 4.6 million tons to 69.7 million tons. This new record consumption level surpassed the previous record in 2007 by 2.0 million

tons. In line with this demand, Doeringer & Crean (2006) asserts that fast fashion has taken centre stage with improved global economic levels. Consequently, millions of metric tons of used clothes and textiles are available annually especially from the developed nations (Haggblade, 1990; Hawley, 2006; Claudio, 2007). According to Hawley (2006), the apposition of a throw-away society with the realization that natural resources are threatened is a vivid illustration of the confounding problem of contemporary lifestyle. There is thus need to focus on the problems associated with fast fashion and contemporary lifestyle where a lot of clothes are disposed after a short while.

While the majority of these clothes end up in landfills, a considerable size is exported to markets in developing countries (Brooks & Simon, 2012). When the apparels and clothing are worn out, Claudio (2007) notes that they cause environmental pollution from whichever methods are used to dispose them. However, recycling of the apparels and textiles can be used not only to solve the problems of environmental pollution, but also to provide an economic opportunity for millions of jobless youths in the developing world. Data from the International Trade Commission indicate that between 1989 and 2003, American exports of used clothing more than tripled, to nearly 7 billion pounds per year. According to a new report from the Council for Textile Recycling (CTR), (Goudeau, 2014) the average American throws away 70 pounds of clothing every year collectively approximated to 3.8 billion pounds of waste.

Sustainable consumption as an aspect of consumer behaviour, involves pre-purchase, purchase and post-purchase components. The disposal component is a relatively new area of research. Essentially this final component of consumer behaviour is about whether clothing is re-used, recycled or simply discarded or destroyed. Textile recycling originated in the West Riding of Yorkshire about 200 years ago when the "rag and bone" men went door-to-door to collect rags, metal and any other household articles. Today, many consumers dispose of their clothing to charity shops, where donations are sorted and are then either sold, sent to developing countries where they are re-used or sent to a recycling plant and made into fillings or cleaning rags. Linen, cotton and viscose can be made into paper pulp and wool can be recovered and felted or re-spun. Textile reclamation businesses recycle both natural and man-made fibres and 50 per cent of all the textiles we throw away are recyclable. The advantage of re-using and recycling has both environmental and economic benefits. Textiles present particular problems in landfill as synthetic products do not decompose, whilst woollen garments decompose and produce methane, which contributes to global warming. In the UK, Nathan's Wastesavers collects goods from charity shops and more than 1,000 textile banks; they sort and process more than 350,000 kg of material every week of which 98 per cent is reused or recycled.

Birtwistle and Moore (2007) investigated how consumers dispose of fashion products and how possible it was to increase sustainable consumption of textiles. The research identified the influences in increased purchase behaviour and the tendency to keep clothing for a shorter time. Using focus groups and key informant interviews, the study

identified consumers' lack of understanding of how this behaviour affected the environment.

The process of apparel recycling impacts many entities and contributes significantly, in a broader sense, to the social responsibility of contemporary culture (Hawley, 2009). By recycling, Hawley, (2006) observes that companies can realize larger profits because they avoid charges associated with dumping in landfills while at the same time contributing to goodwill associated with environmentalism. However, in developing world where most of the used apparel are destined, the idea of apparel cycling is relatively new and hence technology associated with this process is still little known and used despite the fact that textiles are nearly 100% recyclable, and hence nothing in the textile and apparel industry ought to be wasted. This study sought to establish dynamics of apparel recycling in Nairobi Kenya as a means of addressing youth unemployment in the country.

This paper provides a systems perspective that depicts the textiles recycling processes and products in Nairobi. The study puts in perspective the different levels within the human system that are concerned with apparel recycling. This study provides a synthesis of how systems theory provides a useful tool to project future trends for the textile and apparel recycling process particularly in developing world.

Theory

This study was guided by the Systems theory spearheaded by Gregory Bateson, Murray Bowen, Anatol Rapoport, W. Ross Ashby, and Margaret Mead. One of the main perspectives of systems theory is viewing an individual or group as its own ecosystem with many moving parts that affect each other. Systems theory provides a useful theoretical framework for understanding the textile recycling process. The systemic view helps in explaining the connectedness, interdependencies, feedback processes, and integration of the textile recycling system. Social systems theory offers a unified framework for the analysis of social reality at a higher level. The theory allows for the understanding of individual behavior in the context of the environment and situational factors. Rather than simply acknowledging the importance of environmental factors, social systems theory makes it clear that many things, such as economics, legal/political constraints, technological advancement, cultural perspectives, competitive environment, and infrastructure, must be considered. In the case of individual behavior of textile recycling, environmental factors such as local solid waste policies, convenience of local charity groups and local attitudes toward recycling can all effect individual recycling behavior. In this study, social systems mean systems constituted mainly by human beings, ranging from the micro unit such as individuals, families, and friends, to macro groups such as family owned companies. The interrelationship between human behaviors and decisions, environmental concerns, policies, technology, infrastructure, and competition were considered.

Research Methods

This study was carried out in Nairobi County - Kenya. The study targeted individuals, families, groups and companies involved in textile recycling. Descriptive survey research design was used since it helped in collecting wide-ranging, in-depth data and

thorough examination of the dynamics of textile recycling as a means of addressing youth unemployment in Kenya (Bogdan & Biklen, 2007). Using five (5) companies, ten (10) groups and fifty (50) individuals involved in textile recycling, this study employed an interview guide in collecting data from the respondents. Two people in the top management – the company executive officer and Human resource manager were each purposively sampled from the five companies and groups making 30 respondents. The total sample was 80 respondents. The companies, groups and the individuals were randomly selected across the county. Qualitatively Data collected was analyzed according to the themes in the objectives of the study. Quantitative data was analyzed descriptively using frequencies, percentages. Data was presented in charts and tables.

Results

This section presents the data analysis, presentation and interpretation. This study sought to establish the source of used clothes that are used as raw materials, items made from recycled clothes and finally the market dynamics of the products.

Demographic details of the respondents.

The demographic details of the respondents were determined and presented in Table 1.0.

Table 1.0: Demographic Details of the respondents

Characteristics		Frequency	Percent
Age	Below 25 years	17	21.3
	25 - 35 years	24	30.0
	35 - 45 years	32	40.0
	above 45 years	7	8.8
Gender	Male	43	53.8
	Female	37	46.3
Highest Education level	Primary	8	10.0
attained	Secondary	34	42.5
	College	38	47.5
Type of enterprise	Individual	50	62.5
	Groups	20	25.0
	Companies	10	12.5

Data in Table 1.0 shows that the majority (40%) of the respondents were between 35 – 45 years old, 30% were between 25 – 35 years old while only 8.8% of the respondents were above 45 years. The study also revealed that 21.3% of the respondents were below 25 years of age. The study also showed that there were more male (53.8%) than females were who involved in the textile recycling industry. Finally, the study showed that 38% of the respondents had attained college education while only 10% of them had a primary school certificate. It was determined that (62.5%) of the respondents were involved in individual enterprises, 20 (25.0%) were from groups while 10 (12.5%) were from companies involved in fabric recycling.

Source of Raw Materials

This study sought to establish the source of the used clothes that were used as raw materials by the respondents. Table 1.0 shows the results.

Table 1.0: Sources of waste clothes used as raw materials in the recycling industries.

Source	Respondent type	Individual		Total	
		Frequency	Percent	Frequency	Percent
Importation	Companies	9	50.0	18	22.5
	Groups	8	44.4		
	Individuals	1	5.6		
Second hand clothes vendors	Companies	10	13.9	72	90.0
	Groups	20	27.8		
	Individuals	42	58.3		
Door-to-door collection of waste textiles	Companies	2	4.8	42	52.5
	Groups	6	14.3		
	Individuals	34	81.0		
From dump sites	Companies	0	0.0	11	13.8
	Groups	2	18.2		
	Individuals	9	81.8		
Charity shops	Companies	2	33.3	6	7.5
	Groups	4	66.7		
	Individuals	0	0.0		

***Multiple responses allowed (n = 80)**

The results in Table 1.0 shows that 90% of the textile recyclers obtained their used clothes from second hand clothes dealers, 52.5% carried out a door -to -door collection of used clothes that were no longer needed while only 22.5% of them imported second hand clothes to be used as raw materials in their recycling industries. The study also showed that 13.8% of the recyclers collected the waste clothes from dump sites across the cities and major town where they were located while 7.5% obtained form charity shops.

Affordability of the raw materials

The sought to establish if the sources of the waste textiles obtained were affordable. The responses are presented in Table 2.0.

Table 2.0: Affordability of second hand clothes used as raw materials in industries as perceived by the respondents

Industry Type	Inexpensive		Expensive		Very expensive		Total	
	freq	Percent	freq	Percent	freq	Percent	freq	Percent
Companies	8	80.0	2	20.0	0	0.0	10	100
Groups	10	50.0	6	30.0	4	20.0	20	100
Individuals	10	20.0	32	64.0	8	16.0	50	100

The study showed that most (80%) companies perceived second hand clothes used as raw materials as inexpensive while 64% of the individual recyclers felt that the clothes were expensive. The study also indicate that half of the groups perceived the materials as inexpensive.

Items Made Form the Recycled Textiles

The study established the items made from the recycled clothes. The results are shown in Table 3.0

Table 3.0: Items from recycled textiles

Items	Type of industry	Freq	Percent
Ciondos	Individual, groups	41	51.3
Floor mat	Groups, companies	32	40.0
Dusters	Companies	46	57.5
Jewelry box lining	Companies	29	36.3
Car seat stuffing	Groups, companies	9	11.3
Automobile insulation	Groups, companies	9	11.3
Wiping clothes	Individuals, Groups	63	78.8
Paving materials	Companies	38	47.5
Carpet padding	Companies	16	20.0
Baseball and softball filing	Companies	21	26.3
School bags	Individuals, groups, companies	76	95.0
Industry conveyor belts	Companies	8	10.0
Sewing machine belts	Companies	8	10.0

***Multiple responses allowed (n = 80)**

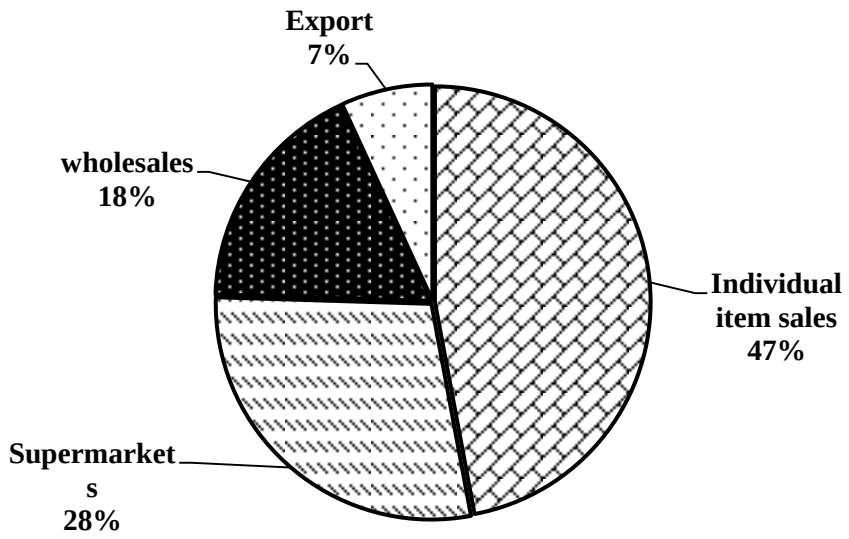
The study showed that 41(51.3%) of the respondents made *Ciondos while* almost 80% made wiping clothes from second hand apparel. Only 11.3% of the respondents indicated that they produced car seats and automobile insulation while 10% made industry conveyor belts and sewing machine belts. More than half of the respondents made dusters.

Market Dynamics

The study sought to establish the market dynamics of the items made from recycled textiles. The study investigated the market for the items, income from the sales of the items and the perception of the respondents on the influence of the industry on the livelihoods.

a).Market for the produced Items

The study established the market for the items produced from the recycled textiles. The results were presented in figure 1.0 below.



The results showed that the majority (47%) of the respondents sold the items individually to customers while 28% sold to the supermarkets. The study also revealed that 18% of he items were sold to wholesalers while 7% was exported to other countries in the region.

Income from sales of the items

This study sought to establish the level of income from the sale of recycled items. The levels were given as monthly income as: Below Ksh. 20 000; between 20 000 and 60 000; Between 60 000 and 100 000 and above 100 000. The results are presented in figure 1.2. The results showed that most (42%) of the enterprises made between Ksh. 20 000 and 60 000 while 37% of the enterprises made between 60 000 and 100 000 shillings monthly from the sales of the goods manufactures from the old fabrics.

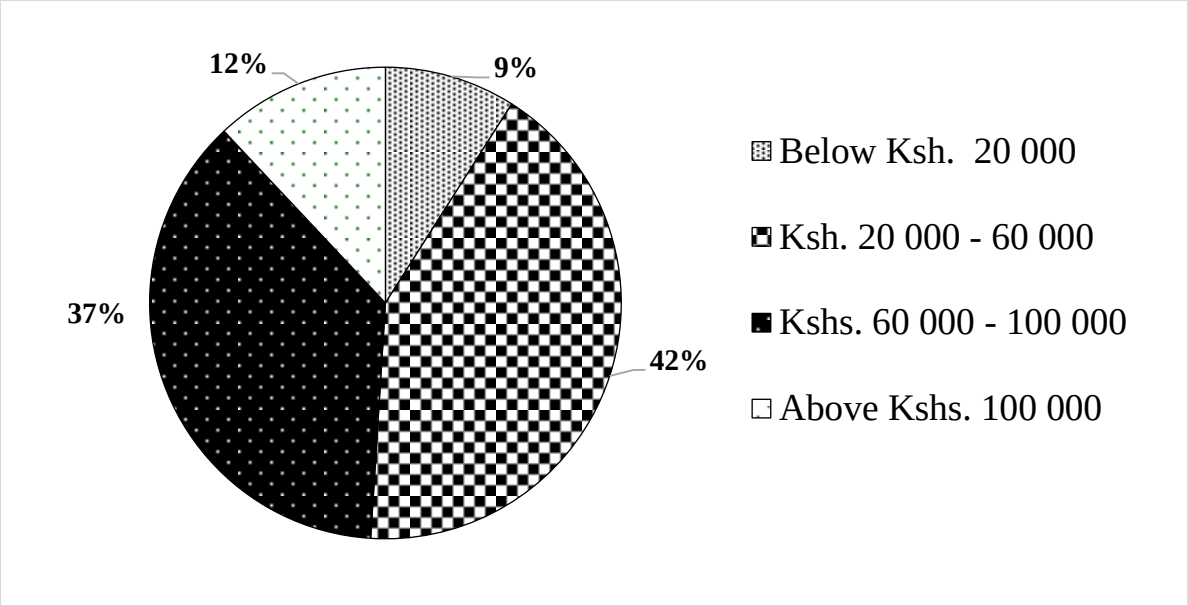


Figure 1.2: Income from the sale of recycled items.

1. **Discussions**

Most textile recyclers obtained their raw materials from second hand clothes dealers and door -to -door collection of used clothes from the public. This shows that most of the dealers in the recycling industry were not able to import used clothes for their recycling activities. This is an indication that most of the dealers were economically low. However, drawing from the local sources, 80% of the companies perceived raw materials as inexpensive. Most of the those who viewed raw materials as expensive were individuals and groups.

Wiping clothes were the most made items by the respondents followed by dusters (57.5%) and *ciondos* (51.3%). On the contrary fewer (11.3%) of the respondents produced items of higher value like car seats, automobile insulation, industry conveyor belts and sewing machine belts. This shows that most respondents did not have equipment that could allow them make advanced products.

Nearly half of the respondents sold the items individually to customers while only few sold to supermarkets and wholesalers. This reveals that most of the enterprises produced less products that did not require bulky marketing and sells. The study also revealed that 42% of the enterprises made between Ksh. 20 000 and 60 000 while 37% of the enterprises made between 60 000 and 100 000 shillings monthly from the sales of the goods manufactures from the old fabrics.

Conclusion and Recommendations

Local sellers of second hand clothes form a major source of raw materials for recycling industry in Kenya. The chain of getting the raw materials from the vendors and other local sources is generally expensive to most of individual entrepreneurs and groups. However, companies with higher returns got their raw materials from the imports from developed markets. Most of the items produced were those that were made using local technology and hence of low value and quantity. The study recommends that the government through the ministry of youth should empower entrepreneurs in the fabric

recycling industry through training on new technology in recycling and providing finances for tools and equipment. The government may also train the entrepreneurs on the need for forming and joining saccos that would enable them in accessing finances.

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