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Measuring Saudi Mothers' Awareness of Sustainable Children's Clothing

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Abstract

A mother begins to care about her baby once she learns about her pregnancy. She becomes even more concerned about her baby after delivery, and, therefore, starts to scrutinize everything that is of interest to the baby, including the selection of adequate clothing that is not harmful to sensitive skin. Given the importance of providing comfortable and healthy clothing to our children, it was necessary to focus on the type of fabrics from which children's dresses are made. Also there has been a need to understand the best characteristics and specifications of fabrics, as sustainable fibers that are made from cotton are commonly preferred over synthetic fibers which are considered unsuitable for children due to the sensitivity of their skin. With the beginning of the 21st century, fast fashion has become a source of growth, and production of clothing doubled dramatically. Estimates indicate that consumers are turning to cheaper clothes which are usually discarded after a short time, while ignoring sustainable fabrics and quality of clothing, thus harming the children's skin. Based on this fact, this research seeks to examine Saudi mothers' awareness of sustainable fabrics, their interest in purchasing eco-friendly children's clothing as well as their purchasing preferences of children clothing. This paper also seeks to raise awareness among mothers on the importance of choosing sustainable fabrics for children's clothing, guide mothers to opt for quality of fabrics over designs, encourage designers to create designs for children's clothing using eco-friendly fabrics, and encourage merchants to use and market eco-friendly fabrics in order to reduce the environmental pollution, in line with the Saudi Vision 2030.

Keywords

Sustainability, Children's Clothing, Mothers' Awareness, Eco-Clothing, Recycling

1. Introduction

Every mother would be concerned about what her child wears on his body, especially as numerous scientific researches have proven that fabrics are loaded with chemicals and dyes that can cause more dangerous harms to the skin. A few years ago, a U.N. research team has found out that there is a rise in birth deformities, hormonal cancers and psychiatric diseases due to man-made chemicals, (Evans, 2013). Most of the children's clothes are made of non-organic cotton. According to the Organic Trade Association, the pesticide Aldicarb is very poisonous to human body; still it is commonly used on cotton fields in 25 countries of the world (Sckoon, 2020). It is startling to know that more than 10% of worlds insecticides and 25% of the pesticides are utilized in cotton production. Even though pesticides are removed from the fabrics during the processing, it is harmful to the workers and the environment. Moreover, many synthetic fibers including polyester, rayon and nylon are also used in making children clothing, which uses a considerable amount of petrochemicals that impacts the health of children and environment. In his study (Abbas, 2001) has found out that some synthetic fabrics, which are used in children's clothing, can affect the child's sensitive skin, causing discomfort when touching the skin.

With the beginning of the 21st century, fast fashion has become a source of growth, and production of clothing doubled dramatically. Estimates indicate that consumers are turning to cheaper clothes, which are usually discarded after a short time of usage, while ignoring sustainable fabrics and quality of clothing, thus harming the children's skin (Remy et al., 2016).

That said, this research aims to measure Saudi mothers' awareness of sustainable fabrics used in making children's clothing, and their interest in selecting eco-friendly clothing for their children, and identify Saudi mothers' purchasing priorities in terms of children's clothing?

To better understand the overall idea behind this research, the following lines provide a brief description of the research's problem, aims, hypotheses and significance.

The research problem

- Are Jeddah-resident Saudi mothers aware of sustainability of children's clothing?
- Are Jeddah-resident Saudi mothers keen to select eco-friendly clothing for their children?
- What are the purchasing priorities of Jeddah-resident Saudi mothers in terms of children's clothing? Quality or design?

The research aims

- To measure Saudi mothers' awareness of sustainable fabrics used in making children's clothing.
- To measure Saudi mothers' interest in selecting eco-friendly clothing for their children?
- To identify the purchasing priorities of Jeddah-resident Saudi mothers in

terms of children's clothing?

The research hypotheses

- There is a statistical significance that demonstrates Saudi mothers' awareness of sustainable clothing (Ecofriendly clothing).
- There is a statistical significance that demonstrates Saudi mothers' awareness of children's Ecofriendly clothing.
- Mothers prefer quality over design when selecting clothing for their children.

The research significance

- It contributes in spreading awareness among Saudi mothers on the importance of selecting eco-friendly clothing for their children.
- It guides mothers to be more interested in fabrics' quality rather than design.
- It encourages designers to design children's clothing made of eco-friendly fabrics.
- It encourages retailers to sell and market children's clothing that are made of eco-friendly fabrics.
- It encourages mothers to select eco-friendly clothing to reduce the environmental pollution as the Saudi Arabia Vision 2030.

2. Literature Review

The Sustainability of Fashion

Textile is one of the biggest industries in the world. Its supply-chain includes agriculture, manufacturing, processing, fabric care, use, recycling and disposal. All most all countries are involved in the textile industry. Some countries have a remarkable involvement in textile and product design and development of manufacturing technologies while other are active in actual production and shipping to numerous places all over the world. However, management of textile waste poses growing concerns to these countries. Researchers have pointed out to the unsustainable textile production and use as the main cause of the problem. To observe sustainability, the textile industry has to look for ways to minimize the excessive use of resources, stop the polluting factors, improve the safety of workers, and ensure the right of consumers to make an informed choice. McDonough and Braungart stated that measurements need to be taken to solve the world ecological crisis (McDonough & Braungart, 2013).

The future of sustainable textile largely relies on its ability to preserve natural resources including land, water and oil, and ensure re-use and recycle of textile products to minimize waste. The textile industry should also focus on other aspects of sustainability such as protection of the environment and human health, occupational safety, as well as meeting consumers' demands for eco-friendly textile products (Speranskaya et al., 2020).

One of the issues that poses the greatest impact on sustainability is disposal of clothes which represents major impact on the environment because the materials used are made of chemicals that can be toxic to the environment and health (Kamis et al., 2017; Muthu, 2014; Joung & Park-Poaps, 2013). Additionally, the

consumers tend to buy more due to affordable prices but dispose it after only after one season (Fletcher, 2008). Therefore, quick fashion contributes towards major waste disposal produced by the fashion industry. With increased production quantity, the volume of textile waste also increased drastically (Murray, 2002). As one solution to this issue, many used cloth shops have been set up which offers another alternative to used clothes, without having to be disposed; it can be re-used and sold at cheaper prices (Joung & Park-Poaps, 2013; Thomas, 2008; Kamis et al., 2017).

In the context of Saudi Arabia, Al-Zahrani's study has revealed the reality of Saudi family's realization of the concept of sustainability and consumption, (Al-Zahrani, 2017). The study has monitored the consumptive habits of the Saudi society in their daily life in general, as well as their practices in consuming electric energy, petroleum, food and clothing. The study has recommended the need to rationalize the consumption in order to reduce the amount of waste and ensure a decent life for future generations.

Environmental consequences of textiles

The clothing industry is a popular industry among consumers, but it has great effects on many environmental, social, and governance concerns (Challa, 2014). The impact of the textiles industry on our earth is unimaginable. It involves the whole product life cycle, starting with supply of raw material, textile manufacture, shipping, retail and disposal at the end of life. The textile manufacturing process includes the use of pesticides in cotton farming, consumption of huge amounts of water and energy during the production, and use of harmful chemicals in dyeing. As per scientific statistics, the production of a single cotton t-shirt consumes 2700 liters of water while a single pair of jeans requires 1800 gallons of water (worldwildlife, 2013). Clothing made of synthetic fiber requires less water, though dyeing both cotton and synthetic fabric requires 1.3 trillion gallons of water each year (Speranskaya, 2020). Moreover, more than 1600 different chemicals are involved in the dyeing processes. Few examples are formaldehyde, chlorine, lead, and mercury. Besides, 20 percent of all fresh water pollution is made by textile treatment and dyeing. The effluent from textile industries carries a large number of dyes and other additives which are added during the colouring process.

Results of a study conducted to test the amount of metals present in soil and groundwater located close to textile industries in India have indicated the presence of huge amounts of metals like Chromium, Iron, Manganese, Copper, Lead, and Cadmium, in violation of the rules set by World Health Organization (WHO) (Deepali, 2009).

Rivers in countries such as China, Bangladesh, and the Philippines, to name a few, were found to be contaminated with numerous harmful chemicals which are hard to remove through conventional treatment processes (Speranskaya, 2020). Moreover, dyes and additives may also undergo degradation to form highly toxic and carcinogenic products (OECOTEXTILES, 2011). In fact, the

textile industry is the world most industrial polluter of fresh water on the earth. Besides water contamination with toxic chemicals, textiles are a major source that causes microplastics to deposit in rivers and oceans. As per the 2017 IUCN (2020) report, 35% of microplastics in the oceans come from the laundry of synthetic textiles, making it the first source of microplastics before vehicles' tyres (Boucher & Friot, 2017).

Role of consumers and textile industry

Raising awareness among consumers on the issue of textiles sustainability is one of many solutions to reduce the environmental harms associated with textiles. Consumers can play a key role to boost sustainability of the textile industry, although some may not be aware of it. Consumers must be aware of the issue before they can make decisions regarding their clothing. Information on the issue must be made available to consumers and measures should be taken to ensuring such information is easily understood and accessible by all. Observing an environment-friendly laundry is one example of how knowledge could alter people's habits. Washing full-loads, using a proper washing-cycle, shifting to an energy-efficient washing machine, washing in cold water, using natural resources such air and sun to dry clothes, and utilizing biodegradable detergents all can augment the concept of sustainability.

Fashion designers are believed to influence about 80% of textile production that affects the environment (Asli, 2012). They are supposed to play a major role in mitigating the impact of textile production on the environment but unfortunately the awareness of the importance of preserving the environment is not adequately realized in most countries. Majority of fashion designers and textile manufacturers all over the world do not actually pay due consideration to the environmental issues in textile production. Ignoring the threats that textile production poses to the environment and failure to tackle related ecological concerns in a timely manner would entail a negative impact on natural resources and ecosystem and subsequently affect human health. Therefore, the textiles industry should look for ways to implement mitigation policy such as reducing the usage of chemicals in the process of textile production and recycling or re-using textile waste. Moreover, regular public awareness campaigns should be conducted continuously (Mostafa, 2006; Laroche, Bergeron, & Barbaro Forleo, 2001). Over the past few decades, the textile industry in many countries has been alerted to the environmental issues of textiles, and consequently started to consider the eco-friendly aspect in their production in order to increase demand and provide awareness regarding environmentally friendly products (Muthu, 2014; Young, Hwang, McDonald, & Oates, 2010; Ali & Sarwar, 2010). Similarly, designers should also be aware of the importance of producing re-useable and recyclable textile products. Few researches have proposed that manufacturers should look for effective means to prompt consumers towards buying recyclable textile products. In their researches, Zheng and Chi (2015); Grasso, McEnally, Widdows and Herr (2000); Yan and Xu (2010) have pointed out to the positive

attitude of consumers as they shifted to textile products that are made of environment-friendly and recyclable fabrics. Other researchers have found that consumers started to see the advantage of apparels made of organic materials such as bamboo, chicken feather fibre and vegetable oil (Hwang, Lee, & Diddi, 2015; Cao, Wool, Bonanno, Dan, Kramer, & Lipschitz, 2014).

Recycling and re-using textile for better sustainability

There is relatively little research on when and how to dispose of a product and when disposal can lead to alternate usage by another person (Prothero et al., 2010). Recycling is one of the activities that contribute towards the sustainability of the environment. It is through recycling that textiles industry is able to reduce destruction of nature by reducing the usage of raw materials. However, consumers neither understand nor have knowledge regarding environmental issues that involve man-made fibre and cotton production (Birtwistle & Moore, 2007). The consumers are also deemed to not feel guilty when it comes to disposing expensive materials and are apparently less interested in matters related to ethics and social awareness (Yee, Hassan, & Ramayah, 2016). Recycle means torn materials are repaired, re-designed, or re-used (Ekström & Salomonson, 2014). Recycling is "optimizing the process of material usage in any ways such as waste being turned inti raw materials for nature or any other industry (McDonough & Braungart, 2013). Ngack (2011) and Kamis et al. (2017) have given a more explicit definition of the word recycling which they describe as the re-use of disposed materials to develop a product that has higher value compared to the original product. Meanwhile, the term re-use means to use used textile products either for original or new purposes. Re-using of used product can help save time, money, resources and energy. The recycling process consumes less energy; thus, it can help nurturing the environment for the future generation. Buying recyclable products or buying products made of recycled materials is one way to promote recycling and waste materials such as textile products can be re-used to produce different textile products that have multiple uses (Kamis et al., 2018).

Natural vs synthetic

It is not easy for mothers to distinguish between natural and synthetic fibers. Lack of knowledge about characteristics of natural and synthetics fibers is one of the reasons why mother cannot easily differentiate between the two types. In this paper only 16% of surveyed mothers said they can distinguish between natural and synthetic fibers.

In recent years, there has been a remarkable shift away from synthetic fabrics, such as nylon and polyester, towards natural fibres, such as cotton, wool, linen and silk. The advantages of choosing natural fabric over synthetic ones range from health reasons, sustainability and environmental concerns. Natural fibers are the best choice for children; the touch and warmth they receive shortly after birth should be nourishing and healing. Therefore, the clothing they spend their time in should be organic, natural and free of harmful chemicals.

Fabrics are either natural or synthetic (or a mix of the two). Both types have

advantages and disadvantage. Natural fibers can be obtained from plants and animals, whereas synthetic fibers are composed of chemical substances. However, each has its value in the textile industry for different reasons. There are two general categories of natural fibers: animal-based or plant-based. Animal-based natural fibers include silk and wool, while plant-based natural fibers include cotton, linen, and jute. Meanwhile, synthetic fibers are constructed of synthetic materials, and are often chemically processed. The textile industry began manufacturing synthetic fibers being cheaper and more easily mass-produced alternatives compared to natural fibers. Examples of natural fibers, include silk which is produced by insects as a material for their nests and cocoons; wool which can be taken from the hair of sheep, goats, and other animals; cotton fabric is made from plant fibers from the cotton plant; linen, a strong, lightweight fabric made from the flax plant. Examples of synthetic fibers includes polyester which is a synthetic fiber created from coal and petroleum; Rayon, a semi-synthetic fiber made from reconstituted wood pulp; spandex, a synthetic fiber characterized by its extreme elasticity; acrylic fibers: are synthetic fibers made from polymers formed by acrylonitrile or vinyl cyanide (Textile Course, 2020).

Purchasing of environmentally friendly clothing

Clothing is one of the most basic needs in every human life, Maslow, A. H. (1943). Delicate skin of children is sensitive to certain fabrics which can make them less comfortable to wear. Therefore, children's apparel should be selected very carefully as the skin of children is usually very sensitive and can get affected by allergies easily (Forsberg & Mansdorf, 2007). Parents' awareness of clothing environmental impact is increasing, and such an awareness have increased the availability of green products in the market, and prompted companies to consider ecological practices as an important aspect in marketing strategies. Previous studies have indicated that consumers who are environmentally conscious will purchase green products and are willing to pay more for them (Kim & Damhorst, 1998). A national poll that included 1000 adults has revealed that 70 percent of consumers were more likely to buy products made by companies that have a relatively friendly strategy toward the environment (Gardyn, 2003). Consumers have generally been found to respond more favorably to environmental claims made by green brands (Phau & Ong, 2007). Factors that prompt consumers to practice ecological purchasing behavior have been examined by many researchers. Consumers who are much concerned about the environment and adopt eco-friendly behavior purchase more green products (Diamantopoulos et al., 2003; Zimmer et al., 1994). Fraj and Martinez (2006) have found that consumers who work to improve themselves and enjoy challenges in doing so are often aware of environmental problems and have an ecologically sensitive lifestyle. In addition, consumers who are inclined to practice eco-friendly behavior are more inclined to practice eco-friendly apparel consumption behavior (Kim & Damhorst, 1998).

Clothing health issues related to children's health

Child's health, safety and comfort should always be mothers' top priorities when purchasing clothing for their children. With this in mind, factors such as quality of fabric, selection of chemical-free fabrics must be taken into account when selecting the clothing.

The skin is the external body surface that secretes and absorbs. When harmful chemical substances touch the child's skin, they can enter blood stream and cause many health problems. Therefore, it is recommended to buy clothing that are made of natural fibers such natural cotton, silk, and wool.

Dyes, agents used for finishing, toxic metals, pesticides, persistent organic pollutants and phthalates are all considered a threat to children's health. Sensitive skin of children reacts to certain fabrics which make them less comfortable to wear (Dogbey et al., 2015). Children's fabrics should be selected very carefully as their skin can get affected by allergies easily (Forsberg & Mansdorf, 2007). It is therefore important for parents to have some ideas about the quality of fabrics from which children clothing are made. It is also the responsibility of clothing manufacturers to consider the clothing inherent risks and hazards to the safety of children Henderson (1973).

Quality characteristics of apparel products

Several studies have examined the important quality attributes of apparel products. Seven factors of apparel products were identified including performance, components, garment care, appearance, construction or workmanship, style or fashion, and fit (Rayman et al., 2011). In his study, Abraham has also mentioned important attributes of apparel products such as fabric and garment construction, care, value, style, and service (Abraham-Murali & Littrell, 1995). Forsythe has concluded that apparel products had the extrinsic cues for quality such as brand name, price, package, and store image and intrinsic cues such for quality such as design, style, fabric type, fiber content, and construction details, (Forsythe, 1991). North has maintained that style was the most important attribute for consumers when purchasing apparel products (North et al., 2003).

3. Research Methodology

This research employed the descriptive analytical approach, where it qualitatively and quantitatively studies the natural, social and economic phenomena to explain the characteristics of the phenomenon, its size, changes and degree of association with other phenomena in the western region of Saudi Arabia (the city of Jeddah).

4. Research Sampling

Kvale and Brinkmann (2009) state that, in the designing stage of the study, the researcher must think first about the number of subjects. Too few subjects make a study unreliable; too many make it "unwieldy" (p. 96). Determining the sample sizes involve resource and statistical issues. Usually, researchers regard 100 participants as the minimum sample size when the population is large. However, in

most studies the sample size is determined effectively by two factors: 1) the nature of data analysis proposed and 2) estimated response rate (Alshibly, 2018). In our research, the plan was to survey 245 Jeddah-resident Saudi mothers. However, only 150 responded to the questionnaire of which housewives represented 56.7% while working mothers represented 42%. In this research, the sample was limited to mothers who have 2 to more than 5 children with age category ranging between 2 to 5 years old.

Steven K. Thompson equation was used (Thompson, 2012) to calculate the sample size, from the next formula:

Steven K. Thompson equation.

The sample size	149.8331635	
0.05	1.96	3.8416
0.0025	0.5	

$$n = \frac{Np(1-p)}{\left[\left[N-1\left(d^2 \div z^2\right)\right]+p(1-p)\right]}$$

where:

n: sample size;

N: Population size;

z: Confidence level at 95% (1.96);

d: Error proportion (0.05);

p: Probability (50%).

The sampling also utilized the One-Sample Kolmogorov-Smirnov Test procedure. The test is normally used to test whether a sample comes from a specific distribution and determine whether a sample comes from a population that is normally distributed.

5. Design of the Demographic Survey

An electronic demographic survey was created with the aim to collect personal demographic information of 150 Jeddah-resident Saudi mothers to ensure the sample does represent the targeted population. The researcher asked all participants to fill out a personal data sheet for gathering pertinent demographic and background information. Participant mothers were requested to identify their profession, the number of their children, their age categories, monthly income and academic level. A pre-coded list of answers has been developed for the questions.

6. Design of the Research's Questionnaire

An electronic questionnaire on Saudi mothers' awareness of clothing sustainability was developed to answer the research's questions and confirm its hypotheses. The researcher made a listing of all the objectives and what information

is required in order that they are achieved. Then a full list of questions that could go into the questionnaire has been made. While designing the questionnaire, the researcher aimed to make these questions as comprehensive as possible so as to meet the research's objectives. Later, the questions were developed to be as close to the point as possible, so that they make sense and generate the right answers. A pre-coded list of answers has been developed for each question. The questions of the questionnaire were put into an appropriate sequence. The questionnaire was comprised of 3 pivots of 13 questions. The first pivot focused on mothers' purchasing awareness and was comprised of 4 questions. The second pivot, comprised of three questions, was meant to measure mothers' awareness of some aspects of textile sustainability, while the third and last pivot was meant to measure mothers' awareness of children eco-clothing. An introductory note has been provided at the beginning of the questionnaire, informing the targeted sample about the aims and objectives of the research, and assuring them that their answers will be treated with complete confidentiality and will only be used for scientific research purposes only. After collecting the e-questionnaire's responses, the researcher printed the sheets, organized the data into an excel sheet, converted the results into charts, and reported the demographic results in narrative form as follows:

1) Results of the demographic questionnaire

56.7% of surveyed mothers were housewives, 42% were employees, and 3.3% were students (Figure 1).

48% of surveyed mothers have 1 to 2 children, 33% have 3 to 4 children, and 19% have 5 or more than 5 children (Figure 2).

78% of the research samples were university graduates, 10% were high school students, and 12% were postgraduates (Figure 3).

28.7% earn SAR 5000 - 9000; 31.3% earn SAR 10,000 - 15,000; 21.3 earn SAR 16,000 - 20,000; 18.7% earn more than SAR 20000 (Figure 4).

29.3% of mothers were aged between 41 - 45; 28.7% aged between 36 - 40; 24% aged between 31 - 35; 16.7% aged between 26 - 30 and 1.3% aged between 20 - 25 (Figure 5).

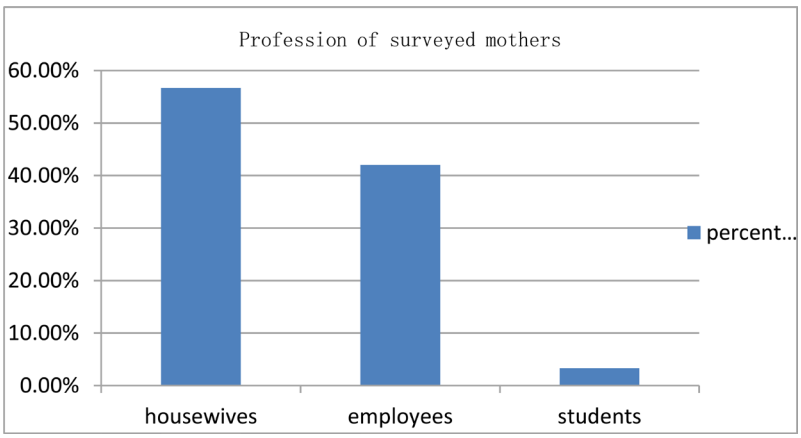


Figure 1. Profession of surveyed mothers.

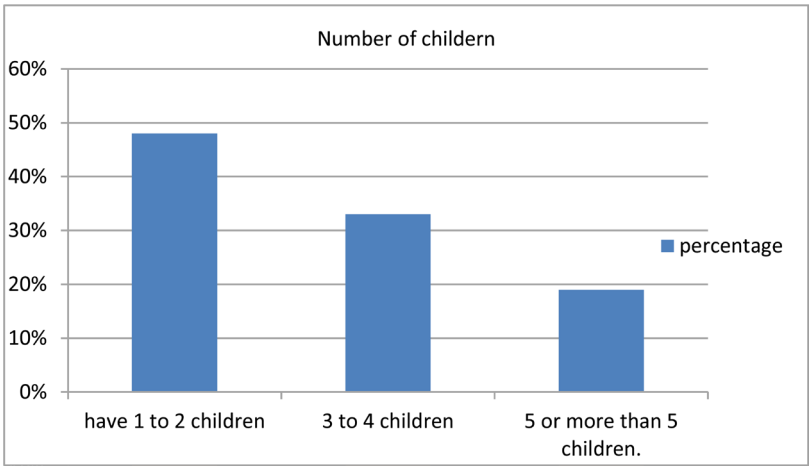


Figure 2. Number of children of surveyed mothers.

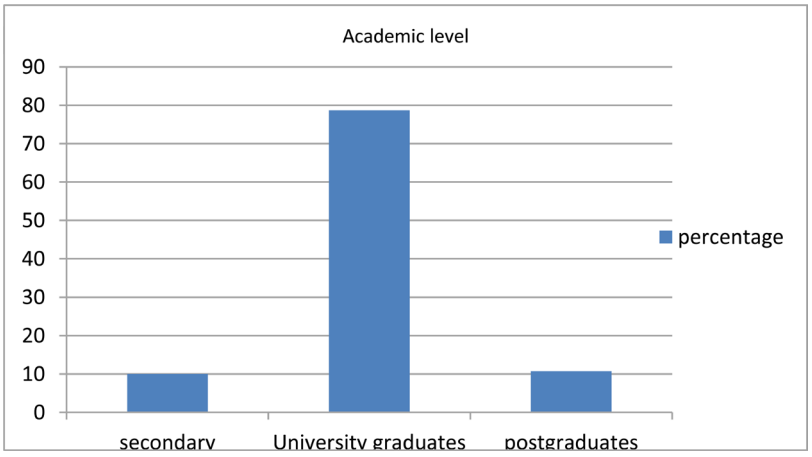


Figure 3. Academic level of surveyed mothers.

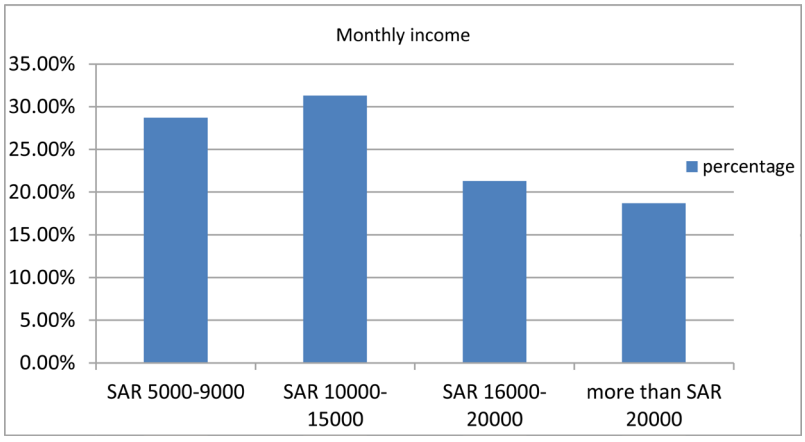


Figure 4. Monthly income of surveyed mothers.

2) Results of a Questionnaire on Saudi mothers' awareness of clothing sustainability

In terms of mothers' awareness of the concept of textile sustainability, 20.7 of mothers said they are familiar with concept of textile sustainability and buy

eco-friendly clothing for their children; 28% said they often buy eco-friendly clothing; 26% said they sometime buy sustainable clothing; 10% rarely buy it and 15.3% said they never sought to buy eco-friendly clothing (Figure 6).

As for the benefits of natural fabrics being the best alternative to ensure clothing sustainability, a majority of mother respondents (44%) said they believe natural fabrics would ensure clothing sustainability (Figure 7).

As for the feasibility of clothing recycling to achieve sustainability in the textile industry, majority of mother respondents (38%) said recycling can often ensure clothing sustainability; 28.7% said recycling can always achieve sustainability

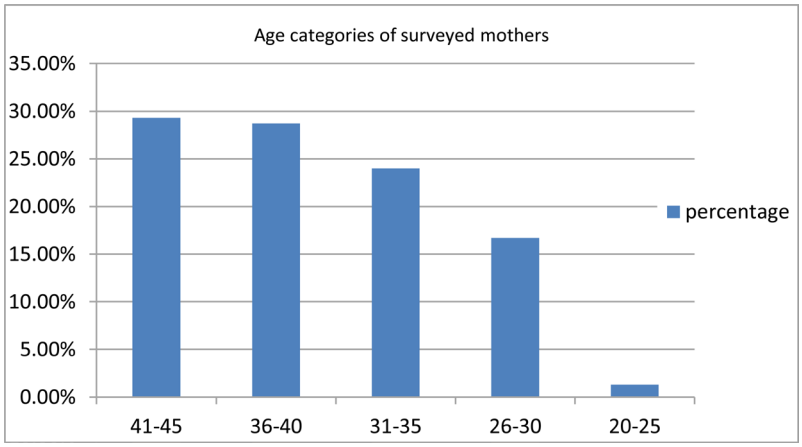
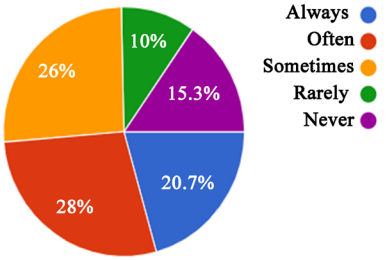


Figure 5. Age categories of surveyed mothers.

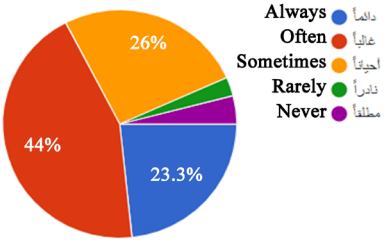


One-Sample Kolmogorov-Smirnov Test

		الوعي بالاستدامه
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	11.18034
Most Extreme Differences	Absolute	.190
	Positive	.142
	Negative	-.190-
Kolmogorov-Smirnov Z		.424
Asymp. Sig. (2-tailed)		.994

a. Test distribution is Normal.

Figure 6. Mothers' awareness of textile sustainability.



One-Sample Kolmogorov-Smirnov Test

		تحقق الاستدامه بالاقمشه الطبيعيه
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	25.75849
Most Extreme Differences	Absolute	.224
	Positive	.224
	Negative	-.177-
Kolmogorov-Smirnov Z		.501
Asymp. Sig. (2-tailed)		.963

a. Test distribution is Normal.

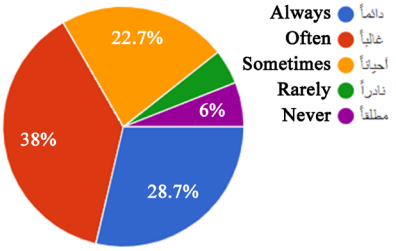
Figure 7. Using natural fabrics for clothing sustainability.

while 6% only said recycling never achieve sustainability (Figure 8).

Regarding mothers' ability to differentiate between natural and blended fabrics, majority of mother respondents (34%) said they can often distinguish between natural and blended fabrics (Figure 9).

Regarding mothers' keenness and interest in examining clothing labels for the identification of the type of fabrics, 29.3% said they always inspect the label; 28% said they sometime do so; 16.7% often inspect the label; 16.7% rarely inspect labels; 9.3% never do that (Figure 10).

In terms of purchasing eco-friendly children clothing, 34% said they sometime buy eco-friendly children clothing; 26% often do that; 15.3% rarely buy eco-friendly clothing; 13.3% always buy; 11.3% never buy eco-friendly clothing (Figure 11).

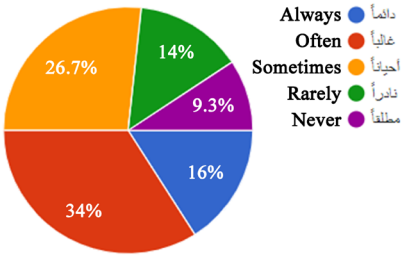


One-Sample Kolmogorov-Smirnov Test

		تحقيق الاستدامه باعاده الاستخدام
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	21.70253
Most Extreme Differences	Absolute	.233
	Positive	.233
	Negative	-.173-
Kolmogorov-Smirnov Z		.522
Asymp. Sig. (2-tailed)		.948

a. Test distribution is Normal.

Figure 8. Recycling of clothing to achieve sustainability.

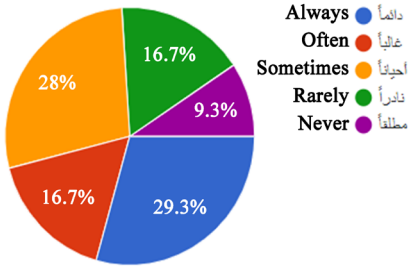


One-Sample Kolmogorov-Smirnov Test

		الفرق بين الاقمشه المخلوطه وغير المخلوطه
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	15.11622
Most Extreme Differences	Absolute	.254
	Positive	.254
	Negative	-.146-
Kolmogorov-Smirnov Z		.569
Asymp. Sig. (2-tailed)		.903

a. Test distribution is Normal.

Figure 9. Mothers' ability to differentiate between natural and blended fabrics.



One-Sample Kolmogorov-Smirnov Test

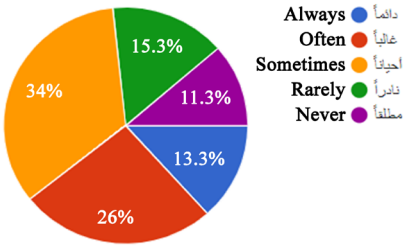
		فحص البطاقه
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	12.70827
Most Extreme Differences	Absolute	.253
	Positive	.253
	Negative	-.227-
Kolmogorov-Smirnov Z		.566
Asymp. Sig. (2-tailed)		.906

a. Test distribution is Normal.

Figure 10. Examining clothing labels.

A majority of mother respondents (75%) said they buy the clothing of their children from retail outlets (Figure 12).

As for purchasing children clothing through the websites, majority of mother respondents (38%) said they rarely buy through the internet; (31.3%) never use the internet to buy clothing (Figure 13).



One-Sample Kolmogorov-Smirnov Test

		شراء أقمشة صديقة للبيئة
N		5
Normal Parameters[a]	Mean	30.0000
	Std. Deviation	14.49138
Most Extreme Differences	Absolute	.285
	Positive	.285
	Negative	-.185-
Kolmogorov-Smirnov Z		.638
Asymp. Sig. (2-tailed)		.810

a. Test distribution is Normal.

Figure 11. Purchasing eco-friendly children clothing.

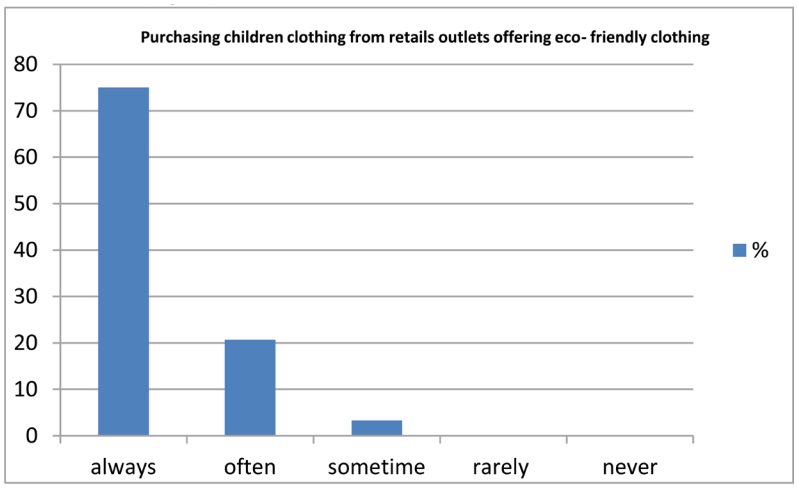


Figure 12. Purchasing children clothing from retails outlets offering eco-friendly clothing.

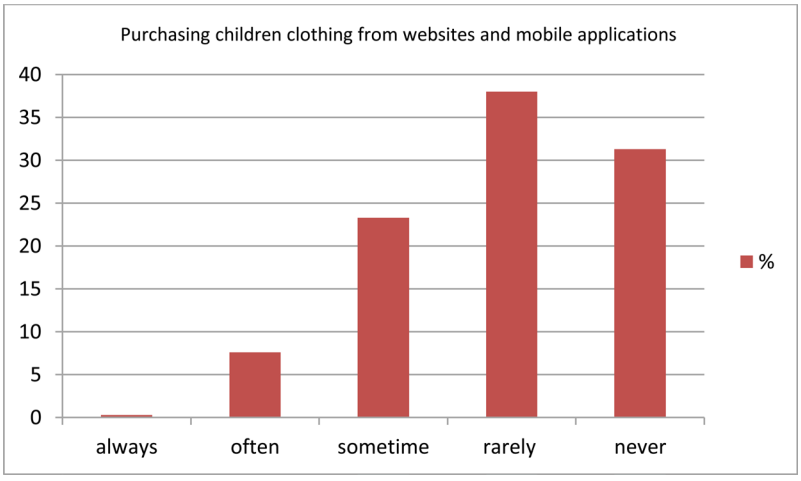


Figure 13. Purchasing via the internet.

Majority of respondent mothers said they prioritize quality and durability of fabrics over design, price or brand when purchasing their children' clothing (Figure 14).

7. Discussion of Results, and Conclusion

This paper sought to measure Jeddah-resident Saudi mothers' awareness of sustainable fabrics used in making children's clothing, their interest in selecting eco-friendly clothing for their children and identify their purchasing priorities in terms of children's clothing. To do so, the researcher has hypothesized the exitance of *statistical significance* that demonstrates Saudi mothers' awareness of sustainability-related issues. Indeed, the results of the questionnaire on Saudi mothers' awareness of clothing sustainability have confirmed the research's first two hypotheses of the existence of a *statistical significance* that demonstrates Saudi mothers' awareness of some aspects of sustainable clothing in general, and children's eco-friendly clothing in particular. The results have also confirmed the third hypotheses that Saudi mothers prefer quality over design when selecting clothing for their children. For, according to the results, a majority of Saudi mothers were familiar with some concepts of textile sustainability and do actually buy eco-friendly clothing for their children. As for the benefits of natural fabrics for achieving clothing sustainability, a majority of mothers said they believe natural fabrics boost clothing sustainability. In terms of feasibility of clothing recycling to achieve sustainability in the textile industry, a majority of mothers said they believe recycling is a sure solution to mitigate the impact of textile on the environment and boost clothing sustainability. The results have also shown that a majority of mothers have the ability to distinguish natural from blended fabrics. Regarding mothers' keenness and interest in examining clothing labels for the identification of the type of fabrics, majority of mothers said they always inspect the labels to make sure that the fabrics are safe for their children. In terms of purchasing eco-friendly clothing for children, a majority of mothers said they buy eco-friendly clothing to protect their children against the harms of unsafe fabrics. Examining the purchasing behavior of Saudi mothers, a majority

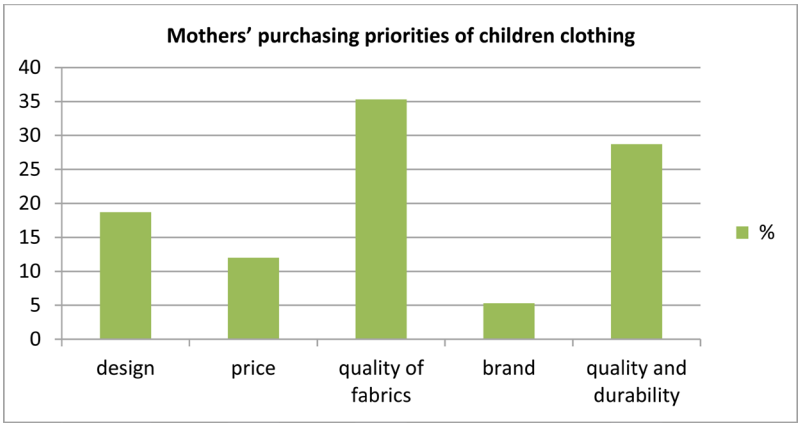


Figure 14. Purchasing priorities.

of mother said they buy the clothing of their children from retail outlets offering eco-friendly clothing. It was also found that a majority of mothers rarely buy through the internet, indicating their keenness to buy clothing form known retail brands that sells eco-friendly fabrics. As for mothers' purchasing priorities, a majority of mothers said they prioritize quality and durability of fabrics over design, price or brand when purchasing their children's clothing. On other hand, the results have revealed a need to further promote the concept of sustainability among Saudi consumers, specially mothers, because a good proportion of the sample were found to be less educated on some concepts of clothing sustainability.

8. Research Deficiency

This paper only measured the awareness of 150 Jeddah-resident Saudi mothers. Although the results of the questionnaire gave a statistical significance that proved a higher proportion of the sample do really recognize some aspects of clothing sustainability, yet there is a need to conduct a more comprehensive research to include major cities of Saudi Arabia. There is also a need to conduct an in-depth study on how Saudi mothers, both working mothers and housewives, can best be educated on technical issues of fabrics quality and selection of safe clothing for children. Also, a future research will need to shed light on how media can be used as a tool to raise mothers' awareness on fabrics' technical issues and safety.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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