



Utilizing Leftover Threads and Colored Beads to Make Artistic Accessories to Achieve Sustainability

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Abstract :

The research aims to prepare and implement some technical accessories using the remnants of colored threads and colored beads wasted by factories to achieve sustainable development, which the state seeks at the present time in order to preserve the environment from pollution with attention to highlighting the functional and aesthetic aspects of innovative designs, and the research relied on the experimental approach, and the descriptive approach and the researcher used several tools, including (the remains of colored threads and colored beads from factories, benefiting from them, recycling them and achieving them in artistic accessories suitable for women in a modern style that keeps pace with The study found that sustainable development can be achieved by identifying the nature and aesthetics of the remains of colored threads and colored beads remaining in the yarn and sewing factories, and recycling into contemporary artifacts.

Keywords : Remnants of threads - beads - artistic accessories - sustainability

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Introduction:

Sustainability constitutes an appropriate framework to reach a higher level of human life by preserving all forms of life for humans, animals, plants and the planet in general, and with the growing human needs, limited resources and the increasing need for recycling skills, the world has recently moved towards the application of sustainable development in its three dimensions, economic, social, inter-cultural, as sustainable development seeks to improve the quality of life of man and his surroundings and achieve prosperity without destroying the life systems on which future generations depend, and integrates The dimensions of sustainable development are in continuous harmony to achieve the highest percentage of sustainability for the lives of individuals.

With the increasing global interest in environmental issues and their preservation, the issue of recycling has become one of the most important issues that many countries care about and try to implement in the right way because of its great importance in economic development, and the phenomenon of decoration and beauty is a human phenomenon that has arisen in humans since ancient times. The culture of the society is diverse, which affects the shape and materials of the accessories. The materials used in the manufacture of accessories vary from metal, leather, ropes and fabric. The compatibility of clothes and accessories indicates the good choice that distinguishes a person from others.

Women's accessories made of colored threads resulting from the process of manufacturing sewing products are one of the ways to recycle the remnants of colored threads and not to pollute the environment with these residues from the manufacturing processes and reuse them again, which achieves sustainable development, **so the study seeks to identify how to benefit from the remnants of colored threads and colored beads in the work of artistic accessories for sustainable development.**

Search problem:

Despite the technological progress that has been made in the manufacture of ready-made accessories, there is a process of wasting not a few in the various stages of the industry with threads, resulting in the remains of colored threads that are little exploited and the remains of colored beads that should be taken advantage of, especially with the lack of raw materials with the specifications required for operation at the present time with high prices in the event of importing them from abroad, which made many accessories and accessories factories threatened to stop.

Based on this, the scientific problem of this research is limited to the main question: **Is it possible to benefit from recycling the remnants of colored threads and colored beads to produce artistic accessories of different materials and employ them as supplements to women's clothing?**

Hence the number of sub-questions:

- What is the possibility of implementing contemporary designs for accessories?
- What is the possibility of using leftover colored threads and colored beads in the preparation of accessories?
- What do consumers and specialists think about the implemented accessories?
- What is the possibility of raising the functional and aesthetic value?
- How the implemented products achieved sustainability

Importance of Research:

The importance of research lies in the exploitation of the remains of colored threads and colored beads in the work of technical accessories designs in ready-made clothing factories and thread factories, which represent a large part of the cost of the product by recycling them again and investing these exhausts and converting them from a source of waste of money to a source that benefits society in terms of functional, aesthetic, economic and environmental to produce accessories of different colors for women.

Research Objectives:

- Reveal the use of the remains of colored threads and colored beads in the work of artistic accessories.
- Contribute to solving the problems resulting from the accumulation of exhaust in colored thread factories.
- Producing artistic accessories and different materials and employing them as supplements to women's clothing with distinctive functional properties from the remains of colored threads and wasted colored beads.
- Identify the opinion of specialists and consumables in accessories implemented with colored threads and colored beads.
- Achieving environmental conservation in the light of sustainable development.

Research hypotheses:

- The possibility of obtaining different color effects in the threads produced using different colors of yarn residues and colored beads.

-The use of leftover threads colored beads leads to a decrease in the cost of the product and an increase in the profit margin for accessories factories and ornamental supplements.

Previous studies:

1-1Study (Heba Asim et al. 2024) entitled "Implementation of some accessories to benefit from the remnants of natural leather in the light of sustainable development" The research aims to prepare and implement some proposed designs for accessories using natural leather residues in the light of sustainable development, which the state seeks at the present time in order to preserve the environment from pollution and try to reuse materials and raw materials in line with the goals of sustainable development with Attention to highlighting the functional and aesthetic aspects and the link of designs to the foundations and elements of the design, and the research follows the experimental approach, and several tools were used (the evaluation form for accessories implemented by specialists - the form of consumer opinions towards the implemented accessories), and the designs were arbitrated by (15) specialized arbitrator, and the results came after statistical treatment to achieve the research hypotheses, it found statistically significant differences between the twelve designs implemented in employing the elements and foundations of the design according to the opinion of specialized arbitrators, as well as statistically significant differences between The twelve designs achieve the innovative and aesthetic aspect according to the opinion of the competent arbitrators, and there were statistically significant differences between the twelve designs in achieving the functional aspect according to the opinion of consumers.

2- A study (Basma Darwish 2022) entitled " Design and implementation of innovative and sustainable women's accessories in the macrame style in the light of the science of ergonomics to revive heritage" The researcher tended to study the possibility of designing and implementing innovative and sustainable women's accessories in the macrame style in the light of the science of ergonomics to revive heritage in order to achieve comfort, safety and ease of use when wearing these accessories, which increases the demand of women to acquire them, so the study aimed at the ability to Taking advantage of the macrame method in the implementation of new and innovative designs of accessories (contract) of high artistic, aesthetic and functional value that achieves the principle of sustainability in order to preserve and revive heritage, taking into account the considerations and ergonomic factors in its design, and the study relied on the two approaches (descriptive - experimental), and within the limits of the research, the human limit relied on a self-study, where (23) diverse products of Access were designed and implemented.Women's Warat (nodes), and used to produce accessories implemented Turkish chain thread and silk macrame thread, and relied on diversity in the use of (square stitch - half double stitch - leaf stitch - popcorn - half-vertical stitch - half-square spiral stitch - oblique stitch - straight stitch The researcher has prepared a product evaluation form for arbitrators in the field of specialization and a product evaluation form for consumables (random sample), and the study has reached many results, the most important of which is the possibility of implementing innovative and sustainable women's accessories in a manner Macrame achieves ergonomic considerations in design by reviving heritage and preserving it from extinction, as there were statistically significant differences between the average degrees of acceptance and success of women's accessories (contract) implemented using macrame art and achieving the aesthetic and innovative aspect in terms of the opinions of specialists and consumers.

3-Study (Schmutz, et al., 2022) entitled "Determining the Possibility of Recycling Industrial Textile Waste Generated within Swiss Companies" The textile industry is known to generate a large amount of post-consumer waste that is generally landfilled or incinerated. In the era of the circular economy, textile waste can be considered A resource for the production of new textile products while minimizing environmental impacts. While there are some studies on post-consumer waste, industrial waste flows generated along the various production steps of textile manufacturing have yet to be investigated. To fill this gap, this study collected quantitative data on industrial waste from Swiss companies. Based on the production of 15'880 tons, a total of 1505 tons of waste were generated in 2019.

Of this, 959 tons of yarn residues and 546 tons of fabric residues were manufactured. Most of the yarn residue was made of single synthetic fibers (such as 100% polyester), while most textile waste was made of mixed materials. Incineration was the most commonly used treatment at the end of life with 562 tons, followed by reuse with 547 tons, open-loop recycling with 316 tons, and closed-loop recycling with 80 tons. The companies participating in the study saw the biggest barrier as the lack of market and recycling who take care of textile waste. Perhaps the main reason for this barrier is the fact that textile products are often made from mixed materials and the recycling technology of these materials is not yet mature. If barriers are overcome, 546 tonnes of waste fabrics could be used as raw materials to manufacture more than 1.7 million shirts..

4-Faysal, et al., 2022 study entitled "Sustainable Yarn Production Using Textile Residues from Garment Industries" A huge amount of waste was generated from the garment industries. This study aims to develop the production process of recycled yarn from clothing waste. The remaining garment fabric was converted into fibers, and the fibers were mixed with virgin cotton in different proportions to produce sustainable 6/1 Ne The yarn qualities produced namely Count Force Product (CSP), Elongation Ratio, Total Quality Index (TQI) and Tenacity were reduced linearly, and the opposite scenario was observed for thick and thin places, neps, inferiority index (IPI) and hair traits (H.) with an increase in the amount of waste added with virgin cotton. Residual fabric (LOF) can be used to develop sustainable yarns and to zero waste management.

5- A study (Asma Al-Sayed and Somaya Hamed 2021) entitled "Benefiting from the remnants and recycling of fabrics in enriching the aesthetic and functional values of children and their supplements to achieve sustainable development" The study reviewed the different techniques and methods added to clothes as a supplement, and the idea of the study came in recycling the remnants of fabrics for the purpose of benefiting from them, and the results reached obtaining new formulations for children's clothing supplements in light of what is compatible with fashion and the current era using fabric residues.

6- Study (Abd Rabbo, Amira Magdy. 2018). Entitled "Benefiting from the recycling of knitted fabrics exhaust to produce decorative threads used in women's clothing" The research aims to achieve an economic return by recycling the waste of the cutting stage and the pattern of fabrics, which provides job opportunities for young people, and achieves the maximum benefit from the remnants of fabrics, and contributes to the elimination of environmental and economic problems resulting from Exhaust threads and fabrics and stacking them in factory stores, and to achieve this goal, Hulk used the cutting stage and patron of different colors cotton fabrics manufactured on weft knitting machines and minced and re-spun to produce decorative threads employed to produce weft knitted fabrics as women's clothing. The research followed the experimental analytical method. In practice, the remnants of the colored fabrics were torn into small pieces, then the Giza 80 cotton bristles were added to the resulting bristles and an equal mixture was made in a 1:1 ratio manually before the Kurdish stage, this mixture was spun to produce decorative threads with different tigers in English numbering 12, 16, 20 with a ring spinning system. All the yarn produced was used to produce weft knitted fabrics on rectangular ribbed machines suitable for use as women's clothing for each tigress separately. Among the most important results of the study: laboratory tests that there is a high correlation between the difference in the number of the produced threads and the properties of elongation and durability, and the results also proved that there is a high correlation between the difference of the thread tigress in the knitted fabrics produced, whether from the installation of doubt on the functional properties of the produced fabrics (explosion strength - water absorption ratio, air permeability - weight), and the structural structure played an important role in influencing the properties of the produced fabrics.

7- A study (Mervat Mohamed Abdel Rahim 2020) entitled "Benefiting from folk art and synthesizing different materials in the production of contemporary textile crafts" that textile crafts have recently developed significantly in form and content and began to emerge from their traditional framework to new and new forms, due to the weaver's desire to search for new horizons to express his

artistic ideas and visions, which prompted him to eat multiple materials by experimentation and synthesis, taking advantage of the various textile structures and the aesthetics of threads and raw materials. In terms of color, thickness and type, the research aimed to study the importance of folklore because of its aesthetic and innovative solutions affecting the methods of performance and the research dealt with the study of the possibility of benefiting from the different textile structures in the production of textile pendants inspired by folk art supported by some thread materials and various raw materials to open new horizons for artistic creativity in the production of textile hanging and the research reached important results, including. Various materials and threads have an impact on the beauty of form and content in contemporary textile hanging.

8- A study (Amira Abdullah Nouredine 2010) entitled Design of furniture with floral motifs from the remains of fabrics and the possibility of benefiting productive families from them" The study aimed to identify the role of furnishings in our home life, but it has become a necessary thing for every home because of its functional and aesthetic importance in the home, but the design factor plays a key role to raise the value of furnishings functionally and aesthetically. Where the study reached important results, including: The need to use modern technological means in the marketing process for the products of these productive families, such as the means of e-marketing, spreading awareness among consumers about the importance of publishing productive families' projects and the role of productive families in economic growth. The need to link the projects of productive families in integrated entities through the existence of a sound industrial, training and productive relationship between The Ministry of Social Solidarity and productive families, pushing manual projects to be strong capable of growing competition and exporting abroad.

Research Methodology:

The research depends on the use of the experimental approach and used to apply experimental evidence in the research as it is a method of acquiring knowledge through observation or direct or indirect experience, and experimental evidence can be analyzed quantitatively and qualitatively.

As well as the descriptive approach: to study the colored threads, especially the method and methods of implementation, how to diversify and move between different stitches, implement innovative accessories, and study the sustainable products of these accessories from the remaining threads and beads.

Research Limitations:

-Objective limits: Take advantage of the remnants of colored threads and colored beads in the work of artistic accessories.

-Materials and tools used:

Threads used: Remnants of wool yarn – ordinary colored yarns from factories.

- Beads used: all small beads in all colors.

Stitches used: (square stitch - half double stitch - leaf stitch - popcorn - oblique stitch)

Products implemented: Art accessories.

Study terminology:

-Accessories:

(Heba Asim et al. 2024, 238) defined them as pieces of clothing supplements that the trainees manufacture to add a shape to the clothing in a connected or separate way from it, increase its beauty and luster, and give the outfit an attractive appearance, which stimulates the satisfaction of the aesthetic and functional desire of the clothed piece.

Also known as additions or pieces that accompany major things to increase their money and splendor, although they are in themselves secondary and not primary, clothing supplements can increase the beauty and luster of clothes if they are added to a distinct and elegant style (Nadia Mahmoud, 1999)

Basma Darwish, 2022, 195) believes that accessories are the magical details of fashion through which the feeling of the external appearance of the individual changes in the form of clothing supplements such as jewelry and others, and women accept to acquire them to increase their beauty and elegance or to give their own distinctive character.

It can be defined procedurally as magical fashion details that change a person's sense of appearance in the form of clothing accessories such as jewelry, and that women use to enhance their beauty and elegance or give them their own individuality.

-Kaya colored threads:

They are quantities of different threads in excess of the needs of customers that constitute a burden and a major environmental and economic problem for factories (Wafa Emara, 2017)

I knew it (Shaima Mahmoud, 2018, 367) is a group of fibers that are coherent with each other and are twisted in the form of straight threads to form the thread and is known for its different types and shapes, including cylindrical threads and strip threads

-Sustainability:

It means the ability of something to continue without disturbing the ecological balance, and its goal is to extend the life of the product, it is necessary to use the natural resources on which the production process can depend, how to use and renew resources, and the overall impact of the final product, it is the use of clean technologies to produce environmentally friendly products. (Khan, et al., 2015)

The procedural definition of sustainability is a set of appropriate and lasting solutions that ensure growth in the environmental, social, economic and technological dimensions, in order to leave a legacy of natural resources for future generations.

Theoretical Framework:

Women are always keen to adorn and shine to increase their elegance and maintain their external appearance, and this is what was highlighted by the study of both (Radwa Mustafa et al. (2021), as it is an innate basic desire, as well as always following fashion and keeping pace with everything new, so many accessories can be created and created that are subject to attractive color regulation, unique translation and unexpected mixing of materials. (Alia Abdeen, 2000: 141) Based on the study of Fatima Madin (2022), a piece of jewelry can be created that represents a small and beautiful piece of art, and as stated in the study of Asma Samir (2022), the jewelry varied between earrings, pendants, necklaces, bracelets, rings, and chest clips (brooch) where jewelry is made From different materials such as precious stones such as diamonds - pearls - rubies and semi-precious stones such as (garnet - turquoise - coral), and referring to the study of Cecil Aziz (2022), the design of accessories is only a creative activity that includes a set of mental skills accompanied by a high ability to sense to visualize an innovative form of accessories subject to a constructive process that regulates the relationship between line, space, mass and space in a more consistent manner, taking into account the rules and foundations of building the artwork, which is represented in balance And rhythm, according to the foundations and components of the design of clothing accessories (accessories), so that this form comes out in the form of aesthetic and artistic organization. (Khalil, 1999: pp. 27-28)

Tools and materials used in the implementation of accessories:

Shear pliers, which are two arms made of metal and have sharp ends used in cutting metal, pliers are used in the work of precise formation of accessories, including:

1- Round jaw pliers: It is two arms whose ends with a round jaw and moves around their axis like pliers and is used to disassemble and install small parts accessories.

2- Pliers with a flat end, which are arms whose ends end with a flat jaw, used in dismantling and installing large parts of accessories.

3- Metal chains consist of stainless steel rings and can be easily disassembled and installed by pliers, and have different sizes, and colors such as gold, silver, and copper.

4- Earrings are a ring of stainless steel metal painted in different colors and have a lock to close the ring around the ear, and there are different types of earrings, including (auger) with a screw and a lock in the form of a rose to close the earring, and there is another type of earrings in the form of the letter (n) and has a small hook or without closing the earring.

5- Metal locks: It consists of two parts, the first part is a hook and has a movable tongue to close and open the lock and is made of steel (stainless steel and with another part is a metal ring sealing the lock on accessories).

According to a study (2018, 52 „**Bridger, R. S**) We find that the foundations of design play a crucial role in the design and implementation of accessories made of colored threads characterized by quality, beauty, comfort, and express cultural identity in a contemporary and innovative way, including:

-Aesthetic values: Ornaments should be attractive and reflect the aesthetic of the art of colored threads, while maintaining balance and consistency in shapes, colors and details.

-Functional values: Ornaments should be comfortable to wear and fit into daily use, taking into account ergonomic considerations of design to reduce stress on the body.

-Durability and durability: Jewelry must be made of materials that withstand frequent use and various conditions, such as humidity and heat.

-Innovation: Jewelry must be characterized by originality and innovation, with the addition of artistic touches that make each piece unique.

-Technology: Modern technologies can be integrated into the design of ornaments to add new functionality or improve quality.

-Cost: Cost must be taken into account to make jewelry available to a wide range of people, without sacrificing quality and aesthetics.

-Proportionality: Dimensions and proportions must be consistent to achieve visual balance.

Case studies and successful projects:

Global projects: Presenting examples of global projects or initiatives that have relied on recycling waste yarn to make art accessories.

For example, some companies or NGOs have launched initiatives to train artisans to reuse yarn in innovative ways.

Local projects: If there are local or regional initiatives, they can be analyzed to study their impact and how they evolve.

Innovation in Design:

- Innovative Accessories Design: Explore how leftover colored threads can be used to create new and innovative designs. Practical examples can be given of design ideas developed using recycled yarn.

- Use of technology: Investigate the role of technology such as three-dimensional printing or design software in converting yarn residues into high-quality art products.

Circular Economy:

- The concept of circular economy: and how this concept manifests itself in recycling the remnants of yarn and turning them into accessories.
- Business model: How to build a circular economy-based business model in the art accessories industry, including reducing waste and increasing resource efficiency.

Future and Sustainability:

- Future outlook: Foreseeing the future use of yarn residue in the art industry and its impact on the economy and sustainability.
- Scaling up sustainability: How the use of recycled yarn can extend to industries other than accessories, such as fashion or interior decoration.

Second: Practical Framework:

From the above, the study found in the theoretical framework that there are different plastic possibilities in benefiting from the remains of colored threads and colored beads in factories in the work of accessories, the research has relied on the experimental approach through the experiment of the researcher, which is based on the development of a number of accessories through the reuse of a set of colored threads and colored beads consumed by making knitted stitches in different styles that suit each design in order to come up with a group of contemporary artifacts that vary in shapes And sizes and plastic and technical treatments, while the colors, stitches and lengths of stitches intended for the display of artistic accessories vary, according to the color and nature of each workpiece, and the following is a presentation of artistic accessories as a product of the subjective experience of the research and the idea of the experiment is to achieve sustainability in the artistic workpiece, by taking advantage of the materials consumed to create a piece of art characterized by novelty and originality, and the research experience is evident through the presentation of artistic accessories as follows:

Experimentation Controls:

The controls of experimentation are determined as follows:

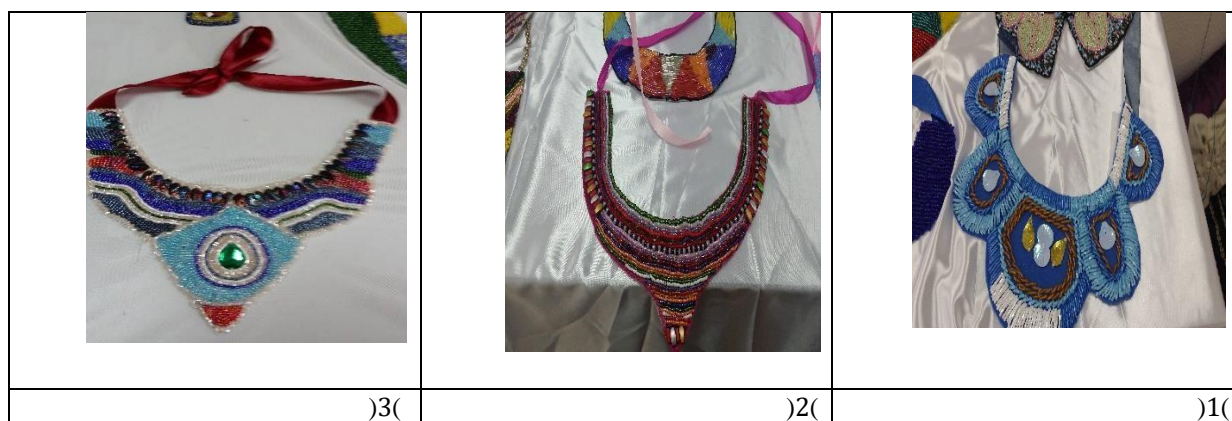
First: Materials used :

Remnants of colored threads – rings that are used in accessories – scissors – colored beads of various sizes

Second: - Methods and methods of performance:

- 1- Cutting - pasting - a thousand - knitting stitches - sewing.
- 2- The application aspect of research and technical analysis of printing works:

Artistic accessories executed with colored threads:



		
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Research Results and Recommendations:

First: Results:

- 1- The study found that sustainable development can be achieved by identifying the nature and aesthetics of the remains of colored threads and colored beads remaining in the yarn and sewing factories, and recycling into contemporary artifacts.
- 2- The study found that plastic and aesthetic values can be achieved for the aesthetics of colored threads and colored beads and artfully formulated that combines spontaneity and intention in the field of artistic works.
- 3- The validity of the hypotheses has been verified and it has been proven that it is possible to experiment in the remains of colored threads and colored beads used in sewing factories and threads, achieving various plastic and textured artistic values that enrich the artistic work of students of home economics.

Second: Recommendations:

- 1- The need to take advantage of the remnants of colored threads and colored beads in the creation of new utilitarian products.
- 2- Encouraging researchers to move towards sustainability and reduce the negative effects caused by thread and bead factories.
- 3- Interest in conducting more research on how to benefit from the remains of colored threads and colored beads in different fields.
- 4- Benefiting from the results of the research in opening the way for home economics graduates to work in factories to recycle accessories or to make small projects.
- 5- Emphasizing the importance of continuing experimental research aimed at utilizing the remains of colored threads and colored beads in a new way that enriches fashion supplements.
- 6- Attention to research and study by specialists in colleges and institutes specialized in this type of arts and shed light on its importance and function aesthetic, utilitarian and economic and develop awareness

among students towards the different methods of working the material of colored threads and colored beads, and try to apply them in the field of plastic arts and clothing supplements.

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