ABSTRACT

UTILIZATION OF PLASTIC BOTTLE WASTE USING TEXTILE STRUCTURAL DESIGN TECHNIQUES INTO FASHION PRODUCTS

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Since its discovery in the 19th century, plastic has become a primary material in various industries due to its strength, durability, and flexibility. However, its popularity comes with significant risks due to its resistance to natural decomposition. Recycling plastic waste is an essential solution, although only about 80% of plastic types can be effectively recycled. The remaining types are difficult to recycle and require higher costs and longer processes. Currently, many alternative methods are being explored to manage plastic bottle waste to mitigate the increasing amount of plastic bottles used daily by society. These methods include repurposing plastic bottle waste into valuable products, such as handcrafted items. Previous research has successfully processed plastic bottle materials using the hot textile technique, where synthetic or natural materials are combined to form new sheets using heat conductors. This heating technique is used because it can drastically reduce the volume of plastic bottles, thereby increasing the quantity of plastic bottle waste that can be recycled and altering the original characteristics or shape of the waste to create a new visual product. This study employs a qualitative approach with data collection methods including observations of potential partner locations, literature reviews, and brand observations. The aim of this research is to advance the processing of plastic bottle waste previously conducted using the structural design technique. Plastic bottle waste will be turned into yarn and processed using the Reka Rakit technique. The exploration of plastic bottle waste using the structural design technique includes macramé, crochet, and tapestry. However, when using crochet and tapestry techniques, the results were less tidy, leading to the conclusion that macramé has greater potential for development to achieve maximal results. Macramé, which was chosen, will then be used as an embellishment while considering elements and principles of design. Additionally, the product design will take into account the characteristics of the material and the exploration that has been conducted. This research aims to discover the potential of processing PET plastic bottle waste into high-fashion, elegant fashion products.

Keywords: Plastic Bottles, Recycling, Fashion, Waste, Plastic, Textile structural design.