

## Innovative Sustainable Clothing for (Children) Teenagers: Zero Waste and Multifunctionality in Design”

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### Abstract:

In light of the rapid growth rates that necessitate frequent garment changes, children's apparel is a key sector of the fashion industry that makes a considerable contribution to the deterioration of the environment. The consequence of this is that more resources are utilized, and more waste textiles are generated. In order to overcome these difficulties, what is required is the development of innovative solutions that combine pragmatism with sustainability. The objective of this research project is to examine the design and development of sustainable, multifunctional children's apparel that adheres to zero-waste principles. This is done with the goal of reducing the impact that children have on the environment and meeting the ever-changing demands of children. The rapid growth of children results in a high rate of clothing turnover, which contributes considerably to the amount of trash produced by textiles. The environmental problems that are already present can be made worse by the fact that traditional techniques of designing and creating garments can result in significant volumes of waste fabric. Sustainable fashion has emerged as a reaction to these issues, with a primary emphasis on the reduction of waste, ethical production, and the utilization of materials that are friendly to the environment. To be more specific, zero-waste design, which eliminates textile waste during the design process, has garnered interest due to the fact that it has the potential to reduce the damaging effects that the manufacture of clothes has on the environment. Despite this, there has not been a sufficient amount of study conducted on the implementation of zero-waste ideas in children's clothing. In addition, the incorporation of multifunctionality into children's apparel has the potential to enhance its use and provide clients with beneficial outcomes in both a practical and economic sense. Our study strives to fill these gaps by developing designs for children's clothing that combine many functions, are environmentally friendly, and adhere to the ideals of zero waste.

### Keywords:

Children's clothing with sustainable, eco-fashion, zero-waste, multi-function, and convertible designs.