The use of metallic threads in warp and weft to produce women's fabrics executed on dobby looms

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Abstract:

Women's fabrics are works of art that rely on aesthetic experience throughout the ages. The aesthetic experience in designing women's fabrics is not limited to creation and creativity, but also includes taste and emotional participation from the consumer. Women's fabrics in the Egyptian market lack consistency with international fashion, especially in the use of metal threads in producing these fabrics, as well as the difficulty of operating these threads as their warps.

Therefore, it became a goal of research to produce women's fabrics that suit the market and compete with international fashion, in addition to enriching Egyptian products with innovative new designs using metallic threads, which contributes to opening new markets for Egyptian women's fabrics to compete in global markets.

The research was based on the production of (15) samples on the dobby machine, where three arrangements of metal threads and cotton threads were made in both warp and weft (1 metal thread: 10 cotton threads), (1 metal thread: 20 cotton threads), and (1 metal thread: 40 cotton threads). This is done by using five different tissue structures (Basket 2/2- twill 2/2 - twill 3/1 - satin 4 - plain 1/1), while keeping the count of both warp and weft, the density of the warp in the cm, and the number of picks in cm, Then laboratory tests were conducted on these samples and statistical analysis was carried out. The results of the research benefited him from the possibility of warping metal threads and using them at a rate of up to 12% of the warp and weft threads in designing women's fabrics without affecting the properties of tensile strength and elongation in the direction of the warp or weft of the fabrics made with the research samples. There was also a non-significant effect on the hardness property of the research samples carried out under the study. Increasing the percentage of metallic threads from 3% to 12% led to an increase in the time of moisture absorption in the research samples under study, and was also affected by the difference in the textile compositions of the research samples under study.

Research problem: Difficulty in working metal threads as warp threads. The Egyptian market lacks fashionable women's fabrics using metallic threads.

Research aims: Producing women's fabrics that suit the market and compete with international fashion. Enriching Egyptian products with new innovative designs using metal threads.

Research importance : Opening new markets for the Egyptian product of women's fabrics produced using metallic threads. Competition between the Egyptian product and international fashion trends for women's textiles.

Hypothesis: (1) Using metal threads as welds or wefts leads to achieving the research goal. (2) Using different textile structures to produce designs for women's fabrics that achieve the research goal.

Research Methodology: This research follows the analytical and experimental approach.

Research sample: (15) Samples were produced using the dobby machine. Three experiments were conducted using three arrangements of metal threads with cotton threads in both warp and weft, using five different weaving structures (Basket 2/2, twill 2/2, twill 3/1, satin 4, plain 1/1) This is with the consistency of its count, both the warp and the weft, the density of the warp in cm, and the number of picks.

Research results: The possibility of warping metal threads and using them at a rate of up to 12% of the warp and weft threads in the design of fabrics without affecting the properties of tensile strength and elongation in the warp or weft direction of the fabrics made in research samples. Increasing the percentage of metallic threads to 12% has an insignificant effect on the hardness property of the research samples carried out under the study. The moisture absorption property was affected by various study factors, such as the arrangement of the metal threads to the cotton threads, as well as the textile composition, at a significance level of 0.05. The highest moisture absorption time is in samples with a plain weave composition of 1/1, with the highest percentage of metallic threads, and the lowest in samples with twill 3/1. Increasing the percentage of metallic threads from 3% to 12% led to an increase in the moisture absorption time in the research samples under study

Keywords:

Metallic threads - ladies fabrics - dobby fabric design

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