Utilizing Artificial Intelligence Technical to develop some Textile Craft Industries

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Abstract:

Textile craft industries are a milestone of creativity that has been growing in value over the ages and has been considered one of the backbones of economics in the past. All studies confirm their important role in industrialization programs and their economic and social benefits, where they rely on local raw materials, making them more integrated into the national economy than large industries. This study deals with providing the scientific foundations for the development of textile crafts by benefiting from the development of design using artificial intelligence techniques, where artificial intelligence techniques allow the creation of new textile designs quickly, with high resolution, that are unprecedented and unexpected, which helps save time and effort for artisans. It also helps to improve the efficiency and quality of design and allows the artisan to express his creativity and excellence in meeting the client's needs. It also enhances its growth and economic sustainability by developing its skills in using smart and new technology to maintain its competitiveness and improve its products. This research offers a useful model for achieving the intended goals, as some segments of the textile craft industry have vanished while others are having difficulties. by defining the stages of production and the role of innovative design using artificial intelligence technologies in developing them. In addition to developing innovative abilities and qualifying young people to work in competitive fields that provide job opportunities and release their creativity, The rapid pace of technological advancement and globalization are challenging traditional methods in the textile craft industries. While these crafts embody rich cultural heritage and historical significance, they face a decline due to changing economic conditions, shifts in consumer preferences, and intense competition from mass-produced goods.. The application of artificial intelligence (AI) in this sector offers potential solutions but remains largely underexplored. By embracing AI, there is an opportunity to preserve these industries' cultural value while making them economically viable and competitive in the global market. The research challenge is underutilizing emerging technologies, such as artificial intelligence and automation, to advance the textile craft industries. Additionally, it addresses the need to enhance craftsmen's intellectual and creative capacities in this domain. The research aims to benefit from artificial intelligence techniques in developing textile craft industries, establish criteria for preservation and advancement, and create a strategy to revive the sector based on current needs. The significance of the research is increasing awareness and promoting belonging towards the love of crafts for the revival of textile craft industries in the hearts of the young. The study highlights the significance of textile and craft industries in reducing unemployment and promoting employment. With the preservation and innovative applications of textile craft industries in contemporary society, this research can guide graduates to self-employment and prepare modest initiatives to optimize entrepreneurial benefits. A descriptive and practical approach is used in this research. where Several designs with varied decorations and a predominantly geometric nature were created using artificial intelligence tools and are suitable for implementation in any of the textile implementation methods used in the research (kilim, carpets, and soumak). Moreover, the three methods can be used together in any design. The designs have been used in more than function, whether floor furnishings or textile hangings, as they always were, in addition to changing their use to new uses such as bags, chairs, sofas, etc., and by taking advantage of intelligence tools, simulating the employment, changing designs, and modifying them until reaching their final image using artificial intelligence tools, which shortened time and effort and achieved the goal of the research. The most important results were: By embracing AI, small heritage industries can leverage this technology to enhance their cultural heritage. In addition, AI can help these small heritage industries create more efficient and cost-effective preservation strategies. The development and revival of textile arts and crafts using artificial intelligence techniques reduces the unemployment rate, transforms some groups that need assistance into productive groups, addresses some economic problems, and stimulates tourism, Artificial intelligence techniques contribute to reviving textile arts and crafts and balanced regional development, covering urban and rural areas. They also contribute to raising the efficiency of textile craft industries, developing products, and increasing production quality.

Research problem: In the textile craft industries, traditional methods are being challenged by the rapid pace of technological advancement and globalization. While these crafts embody rich cultural heritage and historical significance, they face a decline due to changing economic conditions, shifts in consumer preferences, and intense competition from mass-produced goods. The application of artificial intelligence (AI) in this sector offers potential solutions but remains largely underexplored. By embracing AI, there is an opportunity to preserve these industries' cultural value while making them economically viable and competitive in the global market.

The problem is represented by the following questions: What impact does the application of AI have on the adaptability

of the textile craft industries to changing market conditions? In what ways can automation improve the efficiency and sustainability of production processes in the textile craft industry without compromising the quality and uniqueness of handcrafted products? How can AI-driven platforms be developed to facilitate skill enhancement for craftsmen, blending traditional techniques with modern technology training? What are the implications of underutilizing emerging technologies, such as artificial intelligence and automation, in advancing the textile craft industries? What are the potential barriers and challenges to implementing AI in the textile craft industries, and how can they be overcome?

Research aims: Get the Benefit of Artificial Intelligence Techniques in The Development of Textile Craft Industries Develop a strategy to revive the Textile Craft Industries based on current needs. To assess the role of AI in maintaining and enhancing the economic viability and global competitiveness of the textile craft industries.

The significance of research: 1- Increasing awareness and promoting belonging towards the love of crafts for the revival of Textile Craft Industries in the hearts of the young. 2- The study highlights the significance of Textile Craft Industries in reducing unemployment and promoting employment. 3- The preservation and innovative applications of Textile Craft Industries in contemporary society. 4- This research can guide graduates to self-employment and prepare modest initiatives to optimize entrepreneurial benefits.

Keywords:

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