The employment of Sudoku game patterns in developing plastic formulations for the design of clothing fabrics

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Abstract:
Despite the many barriers that separate the definition of science from art, and although each of the words science and art has a different impact on the mind, there is a relationship between them much stronger than it appears at first glance. Art is one of the tributaries of knowledge and its visual tool, as it is not only for fun, but for the performance of multiple functions. Through art, future visions of life and innovative creative solutions to various problems are developed, and given the symbolic connotations of abstract Arabic numbers to build networks in Islamic art, we find that numbers in it are only a symbol of elements Abstract geometric, so the geometric shapes acquire a symbolic character, so the number turns into a symbol of geometric shapes (star dishes) . Art turns into an abstract numerical design, which has its own characteristics and features . On the other hand, artists used the golden ratio in their designs, for its ability to give a sense of the aesthetic, balance and harmony in the design, a ratio that creates a visual balance in the shapes when seen Whereas physicists argue that the essence of scientific fact is related to number. Clothing is one of the most important requirements of humanity, and design is the first step in the clothing industry, so fashion designers create fashions that pervade the world. Fashion is not limited to clothes only, but fashion begins with the design of the materials used in the manufacture of clothes, and the most important of these materials are fabrics . The material has a major role in the success of the innovative costume, as the raw properties are among the features that affect the degree of compatibility of the elements of the artistic work . We find that there are many studies that dealt with the methods of designing and implementing fabrics in general, and they applied Fractal geometry "fractal" in designing the printing of ladies' fabrics, designed the jacket fabrics on the dobby looms, applying the property of self-similarity in the fractal theory, From here it becomes clear that relying on mathematical principles in art and design gives the human mind the ability to perceive and understand the relationships between blocks and spaces in a simpler way. In other words, recognize and understand the relationships between the basic principles of design. Accordingly, the use of Sudoku scheme (as a theory in building fabric designs), which includes the distribution of numbers in a manner that is not repeated in a calculated and organized manner and cannot be replaced, can play a major role in putting forward a new vision for new plastic formulas to design women's clothing fabrics from multiple fabrics with pre-designs. Research aims: The study aims to reach a new and multiple design structure in the field of designing women's clothing fabrics through Sudoku scheme, which can be used in various pieces of clothing.

Research methodology: experimental approach. It is evident from the previous designs that colors play an important role in the design as they contribute effectively to its success and achieving its goal, as dealing efficiently with colors and their connotations increases the design value and gives it activity, vitality and beauty in line with the style of design implementation as each color used in the design has a significance according to its area Or its relationship with other colors of proportionality, harmony and compatibility, so the use of combinations of colors that are in line with each other contributed to achieving harmony and harmony, and the use of color systems graded in tone, value and degree of saturation of a different color group, as well as the distribution of dark areas among the light areas and vice versa and the merging of colors together in groups New color schemes have effectively contributed to obtaining the best color combinations that achieve optical illusions as shown by previous designs. Results: Looking at the products that have been implemented from different aspects, we find that they achieved the design size in terms of the formation and innovation process, where the elements were collected and put into a new configuration to give something that has a function or functional connotation, and if we look at the functional side of the implemented designs, we will see that the innovative form has achieved its purpose. As the designs of the executed fabrics were employed in multiple pieces of clothing (dress - blouse - pants), the job is the thing required to ensure the success of the design and the achievement of its goal, and when focusing on the functional side, we must take into account the aesthetic aspect so that the functional side includes an aesthetic part that satisfies the need. The aesthetic of the product.

References:
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