Comparative study between Executive methods and their integration and its effects on aesthetic and functional aspects of the design of upholstery fabrics

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Introduction:

Furniture (beddings) fabrics are considered one of the important kinds of fabrics that upholstering cloth are produced and exhibited to consumers. They have a good fame of accuracy and care in their field because they have an aesthetic and occupational values concerning product. It is important to choose upholstering cloth perfectly as they are exposed to stress in knitting and use [(1)].

Cloth structure are considered one of the main factors that designer depend on to know fabric properties needed to be achieved whatever they are mechanical or natural. They have a great role in detecting the quality of final product and how they fit with occupational performance. Choosing Cloth structure used in upholstering cloth is considered to be one of the important factors to give the needed specifications that lead to product quality[(2)].

We study the following cloth structure:

The normal pattern style- The excess connection style- The double style.

To know their ability to achieve the aesthetic and occupational values of upholstering cloth.

The Islamic civilization is still considered the best and most beautiful civilization. The Islamic civilization has many sides and a great character, this civilization which was in the Islamic period called Arabic Islamic civilization. The Islamic arts were found in the west from the ocean to the gulf in the east which are considered alive evidence to ability of Islamic artist and his ability to keep his strong personality appearing in this great region regardless of its different environmental properties.

Research problem:

Ignoring the effect of cloth structure (normal pattern, the excess connection style, double style) to the aesthetic and occupational of upholstering cloth, in addition to inability to predict the effect of merging cloth structure to achieve the best prosperities of upholstering cloth.

Research importance:

Contributing to submit a scientific study to detect the best cloth structure to upholstering cloth to achieve the best aesthetic and occupational value, making use of merging cloth structure to achieve the best proprieties to upholstering cloth.

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Research aims:

Submitting a scientific basis to choose the best cloth structure to achieve the best aesthetic and occupational values of upholstering cloth and knowing the effect of merging cloth structure to improve cloth proprieties.

Research hypotheses:

Using cloth structure (normal pattern, double) affects separately the aesthetic value of upholstering cloth, it also affects (normal pattern, the excess connection style, double style) upholstering cloth prosperities.

Research limits:

- Normal pattern style.
- The excess connection style.
- Double style.
- The used machine is jacquard machine.
- The Islamic art.
- Polyester is the used material.

Research methodology:

The research follows experimental analytical method.

Research summary:

Upholstering cloth is the main factor in designing and modifying the furniture piece and often determines quality, style, scale, importance and the age of furniture piece value greatly. There must be harmony between upholstering cloth and furniture piece, the success of furniture piece depends on the relationship between the cloth used in its clothing and the shape of the furniture piece. The more sophisticated the piece of furniture, the less chance of using different types of cloth to fit together. The type of cloth is used for upholstering chairs, sofas, etc. [3].

The current study is concerned with upholstering cloth and knowing the effect of using the following cloth structure (normal pattern, double, excess connection) on the aesthetic and occupational prosperities of the design of upholstering cloth and inspired by Islamic art.

First: cloth structure used:

1- Normal pattern structure

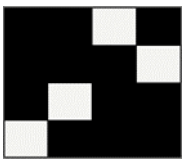


Figure 1

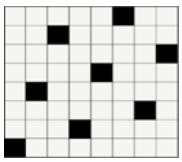


Figure 2

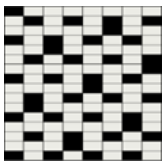


Figure 3

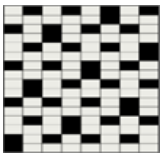


Figure 4

2-Double pattern

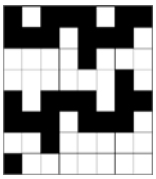
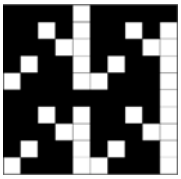


Figure 5



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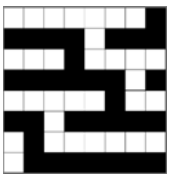


Figure 7

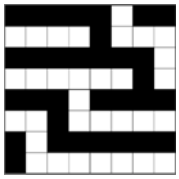
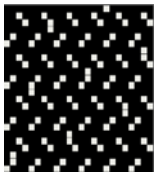


Figure 8

3-Normal pattern structure with excess connection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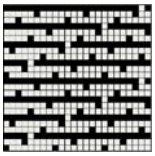
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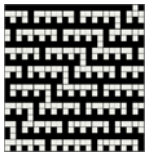
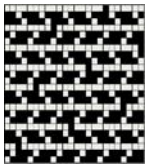


Figure11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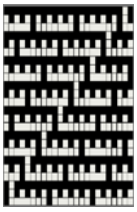
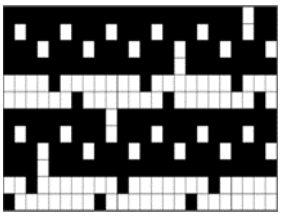


Figure 13

4-Double structure with excess connection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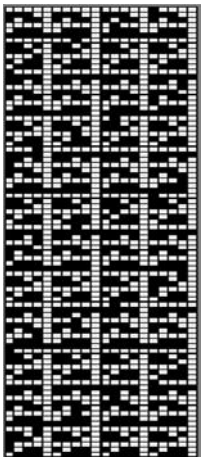
Figure15

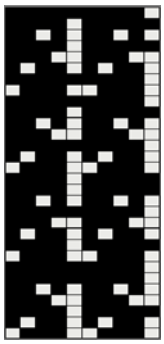
Figure16

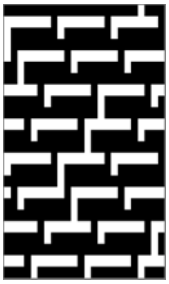
Figure17

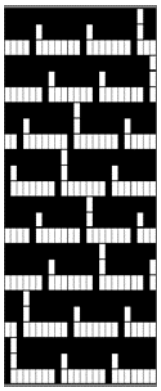
Figure18

Second: tests and results

In the following forms

The first column is the textile structure (Normal pattern structure).

The second column is the textile structure (Double pattern).

The third column is the textile structure (Normal pattern structure with excess connection).

The fourth column is the textile structure (Double structure with excess connection).

First: tensile strength test:

Tensile strength test results in the direction of wrap:

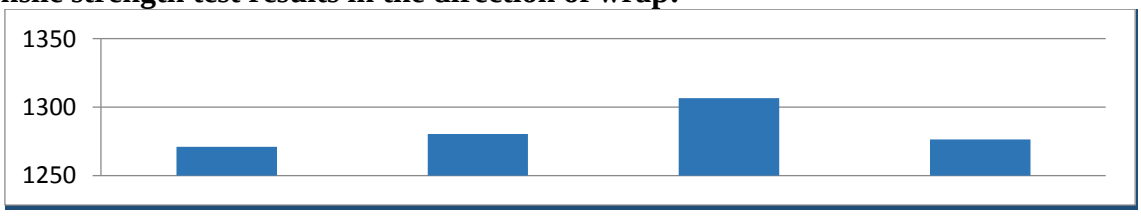

Figure (19) shows the effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the tensile strength of the cloth in the direction of the warp. polyester has achieved the highest tensile strength in the direction of the warp when using the cloth structure (normal pattern with excess connection, then double, then double with excess connection and then normal pattern)

Tensile strength test results in the direction of weft:

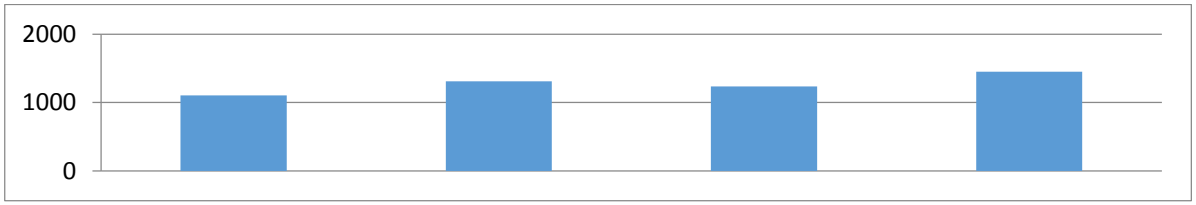

Figure (20) shows the effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the tensile strength of the cloth in the direction excess connection. polyester has achieved the highest tensile strength in the direction of the warp when using the cloth structure (double pattern with excess connection, then double, then normal pattern with excess connection and then normal pattern)

Second, the elongation test

Elongation test results in the direction of warp:

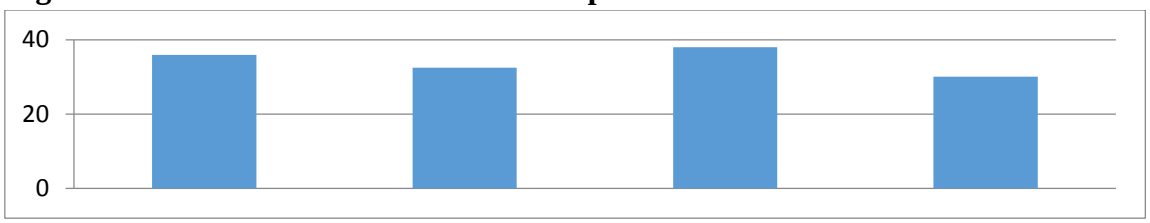

Figure (21) shows the effect of the cloth structure on the elongation in the direction of the warp. The effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the elongation in the direction of the warp. Tensile strength in the direction of warp when using cloth structure (normal pattern with excess connection, then normal pattern, then double, then double with excess connection)

The results of the elongation test in the direction of the excess connection

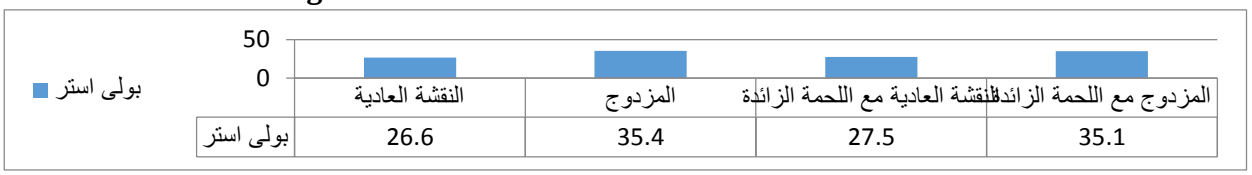

Figure (22) shows the effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the elongation in the direction of the excess connection and showed that: The polyester material achieved the highest tensile strength in the direction of the excess connection when using cloth structure Double - Double with excess connection - Normal Pattern with excess connection - Normal Pattern).

Third, friction resistance test

Friction Resistance Test Results:

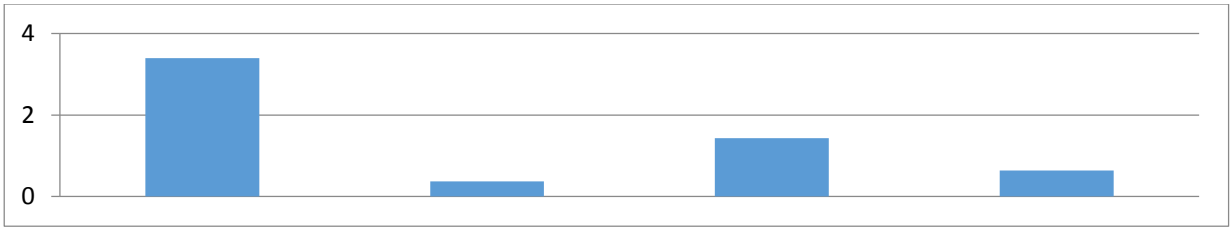

Figure (23) shows the effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the cloth resistance corrosion through friction and showed that: The polyester material achieved the highest tensile strength in the direction of the excess connection when using cloth structure Double - Double with excess connection - Normal Pattern with excess connection - Normal Pattern).

Fourth, test the weight of the square meter

The results of the test weight per square meter of the executed sample:

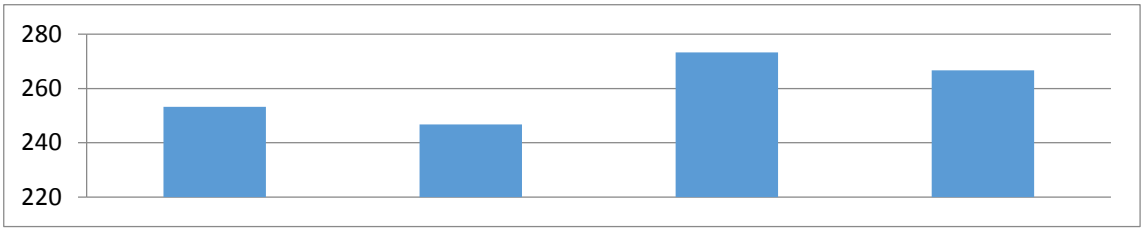

Figure (24) shows the effect of each of the cloth structures used (normal - double - normal pattern with excess connection - double with excess connection) on the weight of the square meter of the executed sample and showed that: polyester material has achieved the highest abrasion resistance to abrasion when using cloth structure (Normal pattern with excess connection and then double with excess connection and then double pattern)

Fifth: Fabric thickness test

Test sample thickness:

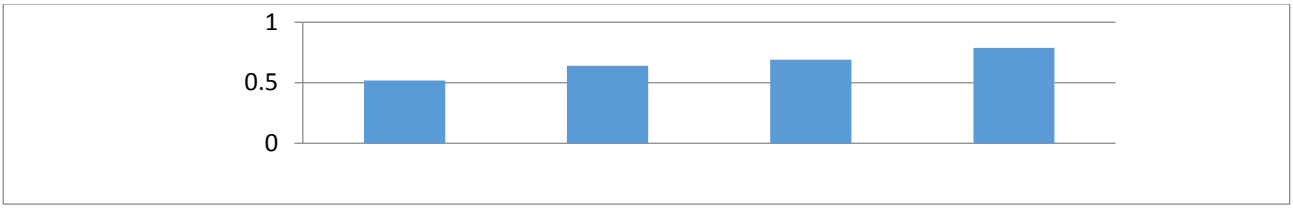

Figure (25) shows the effect of each cloth structure on the thickness of the **sample Table (8)**

Results of Ideal Area of cloth Samples Under Study

material	Cloth structure	Quality area
polyester	Normal pattern	1,25
polyester	Double	1,57
polyester	Normal pattern+ excess connection	1,17
polyester	Double+ excess connection	1,26

Recommendations:

a. The researcher recommends completing further studies and researches on different cloth structure materials and knowing their ability to achieve more aesthetic and occupational values of upholstering cloth.

b. Attention to Islamic heritage is the foundation upon which we build the present and the future.

c. Working to create a contemporary Egyptian Islamic identity for furniture and furnishings instead of tradition.

References as contained in the research:

1- Mahmoud, Marwa Yassin. The aesthetic values of the school influential and utilized in the design of contemporary furnishing fabrics suitable for hotels and tourist villages. Cairo: Master Thesis, Faculty of Applied Arts, Helwan University, 2015.

2- Radwan, Gamal Abdel Hamid. Utilizing the theories of design foundations in developing innovative designer abilities to produce some upholstering fabrics. Cairo: PhD, Faculty of Applied Arts, Helwan University, 2003.

3- Abdul Rahim, Rania Mohammed. The possibility of adapting computer technologies in the development of fabric furniture designs by incorporating some applied methods. Cairo: Master Thesis, Faculty of Applied Arts, Helwan University, 2006.