

Inspired printed designs on textile pendants by the formless mono-type method and its application by direct digital printing technology

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There is no doubt that one of the requirements this era and according to the exacerbation of the crises of import and foreign currency to find the desired product - a local alternative - Provided that, it is characterized "artistic & design" richness in addition to availability & convenient price, so we have to look to develop and think to change, it must be taken into consideration that competition is not easy as the competing product has a set of features and stability in terms of economic regulation, where it exists on a regular commercial cycle without defect only except in case of import problems, which is what gave us an opportunity to find the research problem and its importance in a serious attempt to find suitable design proposals, to find a local alternative creative ideas and its application by available practical

The following is reporting, which we hope will have led to what we hope for

Research team

ملخص البحث

ان المعلقات النسيجية المطبوعة هي اطروحة ليست بحدیثة العهد فلها مریديها في ثنتی العصور و بقاع الارض فهي موجود منذ اقدم العصور بمختلف الطرق الطباعة كالرسم المباشر و الطي و الربط ثم الصباغة مروراً بالطباعة باستخدام الشمع "الباتيك" و الطباعة باستخدام القوالب اليدوية و الطباعة بالاستنسل ثم الطباعة بالشاشة الحريرية "الشبلونات" مروراً بمراحلها المختلفة (اليدوية ، النصف آلیة ، الآلیة وصولاً الى الشبلونات الدائرية) و ننتهي الى الطباعة الرقمية و ما طرأ عليها من تطور متسارع من حيث السرعات و الدقة و انواع الملونات المستخدمة . و كذلك ما یؤدیة من وظيفة كوحدة تغطية لاحد الاسطح القائمة في المكان المراد وضع العمل فيه و لكن ليست الوظيفة هي العامل الاساسي في موضوعنا و لكن ايجاد البديل المحلي الذي يتمتع بالغنى الفني التصميمي هو ذا النقل الاعظم في ذلك الموضوع و الذي يجعل المصمم في حيرة من امره . حيث ان اختيار موضوع العمل المطبوع ليس بالسهل حيث انه يعكس مدى قدرة المصمم على ارضاء المستخدم حيث ان العمل هو عمل جمالي وظيفي اي ان العمل

سيخضع الى دراسة جدوى سوقية لمدى رضى المستخدم عنه بالاضافة الى آليات التنفيذ التكنولوجي و الذي يعول عليه نجاح التجربة التصميمية .

لذا فيجب ان يتوافر في ذلك العمل مجموعة من العناصر و منها التميز الفني التصميمي حيث انه من اهم العوامل التي تجعل العمل له اولوية في الاختيار عن غيره من الاعمال المكررة مثل المناظر الطبيعية او اطباق الفاكهة او بعض الفنون الكلاسيكية او التصوير لبعض الاشخاص او الاماكن الاثريّة .. الخ كما هو موجود بالسوق الان ، لذا فوقع الاختيار على احد الفنون الحديثة و الذى بدا ظهوره في اواخر القرن العشرين مع حركات الفن التحررية و هو فن المونوتيب و الذى يمتاز بسرعة الاداء و غزارة النتائج و غناها الفني و انه لا يمكن تكرار تلك الطبعة مهما كانت درجة دقة الفنان و على وجه الاخص الاتجاه الانفعالي منها و الذي يتميز بالتلقائية

بالاضافة الى ان الطباعة بالطباعة الرقمية في موضوعنا هذا من انسب التقنيات الطباعية و التي توفر للمصمم التعدديه في اداء التصميم من حيث تغيير المجموعات اللونية المستخدمة (خطط التوزيع اللونية للتصميم) "المريجات" بالاضافة الى سرعة الاداء و امكانية عمل مقاسات مختلفة من نفس التصميم و الوفرة في الاقمشة و الملونات و ذلك بكل سهولة و يسر و الحصول على نتائج نهائية سريعة لا يشترط الانتاج الكمي و هذا بمجهود ووقت اقل من التقنيات الاخرى فيصعب وجود تقنية اخرى تعطي الدقة و السرعة و المجهود الاقل حيث انه في تلك التقنية لا يتطلب اعداد اي قوالب او شبلونات او منع بالشموع او مواد اخرى او حتى عمل مجموعة من الطيات ثم الربط و لكن كل ما هو مطلوب معالجة الاقمشة بالمواد المطلوبة لتجهيزها للطباعة – و هو ما سيتم التحدث عنه تفصيلا داخل البحث- ثم ادراجها بماكينه الطباعة و التي تقوم بتنفيذ امر الطباعة بمجرد اعطاء الامر الطباعي لها .

مشكلة البحث :-

- اغلب الحلول التصميمية الموجودة بالسوق المصري مستوردة من الخارج و لا يوجد تصميميات مستحدثة محلية الصنع . تحمل شعار صنع في الصين .
- التطبيق يفتقد الى السرعة و التنوع و التفرد .

فروض البحث :-

- يفترض فريق العمل ايجاد حلول تصميمية مستحدثة تتميز بالغنى التصميمي. عن طريق استخدام طريقة المونوتيب.
- يفترض ايجاد البديل المحلي المتميز بالملائمة السعرية
- يفترض زيادة السرعة في الاداء و التنوع دون اللجوء للانتاج الكمي و ذلك عن طريق استخدام طباعة المنسوجات بتقنية الطباعة الرقمية.

اهداف البحث :-

- التعرف على فن المونوتيب و محاولة التوصل الى حلول محلية الصنع تتميز بالغنى الفني التصميمي و الملائمة السعرية.
- محاولة وضع تصور للبديل المحلي المتميز .
- وضع تصور للخطة الانتاجية الخاصة بالمنتج النهائي .

اهمية البحث :-

- تكمن اهمية البحث في :-
- ايجاد البديل المحلي المتميز .
- ايجاد منتج نهائي له خطة انتاجية و ليس عملا فنيا دون خطة تنفيذية للانتاج .

حدود البحث :-

- استخدام الاحبار المائية و الزيتية لعمل التجارب التصميمية للمونوتيب
- استخدام طريقة الحذف و الاضافة الاحادية اللون في التجارب التصميمية
- استخدام الطباعة الرقمية للاقمشة لتنفيذ النتائج النهائية
- استخدام برنامج "Adobe Photoshop" لعمل التطبيقات على الواقع الافتراضي

منهج البحث :-

- استخدام المنهج التاريخي لدراسة طريقة المونوتيب
- استخدام المنهج التحليلي التجريبي لخدمة اهداف البحث حيث يقوم الباحث باختيار احد طرق المونوتيب و يقدم نماذج لحلول تصميمية مستلهمة لتصميمات مطبوعة على المنسوجات المعلقة المستوحاة من طريقة المونوتيب بطريقة الطباعة الرقمية .

Research index :

1. Introduction
2. Research problem
3. Research Hypotheses
4. Research goals
5. Research Importance
6. Research methodology
7. Research tools
8. Research terminology
9. Research frameworks
 - 9.1. Theoretical framework
 - 9.1.1. Monotype"types"
 - 9.1.1.1. Deletion method
 - 9.1.1.2. Deletion and addition method
 - 9.1.1.3. Linear method
 - 9.1.1.4. Preparation of textures and backgrounds Method
 - 9.1.2. Digital printing
 - 9.2. Historical framework
 - 9.2.1. Design "Artistic"
 - 9.2.1.1. Jackson polock
 - 9.2.1.2. Franz klein
 - 9.2.1.3. Salah Taher
 - 9.2.2. Technology
 - 9.3. Practical framework

- 9.3.1. Design trials
- 9.3.2. Application
- 9.3.3. Results & recruitments
- 9.4. Statistical framework
- 10. Conclusion

1. Introduction

The printed textile pendants are a non-modern issue. They have been used since ancient eras in various printing methods such as direct drawing, tie and dye, using batik, printing by using hand-blocks, printing with stain-cell and screen printing with (Semi-automatic, automatic and rotary), and at end the digital printing and the rapid evolution in terms of speeds, accuracy and types of colorants used.

As well as its performance as job as a covering unit of one of the existing surfaces, but not the job is the main factor in our subject, but it is to find a local alternative that enjoys "artistic & design" richness in addition to availability & convenient price is the greatest aim in our subject, which makes the designer puzzled!!

Choosing of the subject of printed work is not easy, because it reflects the ability of the designer to achieve user satisfaction, it is an aesthetic & functional work so it will be examined by market feasibility study of the extent of user satisfaction in addition to the mechanisms of technological implementation, which is based on the success of the design experience.

Therefore, it must be a set of elements in this work, such as the artistic & design excellence as one of the most important factors that make the work a priority in choosing against other refined works such as landscapes or fruit dishes or some classical arts or photography of some people or archaeological places. Etc. As it exists in the market now, so the selection has turned into one of the modern art, which appeared in the late twentieth century with the movements of liberal art, which is the art of monotype, which is characterized by rapid performance, frequent results and artistic richness, In addition, printing digital printing in our subject is one of the most appropriate printing techniques, which provide the designer in the design performance in terms of changing the color combinations used (color distribution plans for design) in addition to the speed of performance and the possibility of working different sizes of the same design and savings In fabrics and colors, and it is easy and easy to get quick final results does not require quantitative production and this effort and time less than other technologies

It is difficult to have another technique that gives accuracy and speed and less effort, since in this technique does not require the preparation of any molds or printing screens or resistance by waxes or other materials, but all that is required to process fabrics required materials to prepare for printing - Which will be discussed in detail within the search - and then included with the printing machine, which executes the order of printing as soon as the order to print it.

2. Research problem

- Most of the available design solutions in the Egyptian market are imported from abroad and there are no modern designs as" a local alternative".
- The application lacks speed, diversity and originality.

3. Research hypotheses

- The team assumes innovative design solutions that are rich in design. By using the mono-type method.
- It is assumed to find a local alternative that is characterized by price suitability
- It is supposed to increase speed in performance and diversity without resorting to quantitative production through the use of textile printing with digital printing technology.

4. Research goals

- Studying Mono-type art and trying to find the desired product - a local alternative - Provided that, it is characterized "artistic & design" richness in addition to availability & convenient price.
- Try to visualize the competitive local alternative.
- visualization the final product production plan

5. Research importance

This study is expected to benefit the following:

- Find a local alternative.
- Create a final product with a production plan and not a technical work without an executive plan for production.

6. Research Methodology

- Using the historical approach to study the mono-type art
- Using the experimental analytical approach to serve the research goals. The research team selects one of the mono-type methods and presents models of design solutions of printed designs on textile pendants inspired from mono-type art by direct digital printing.

7. Research tools

- A statistical assessment of economic design work

The study case

- Use Mono-type method with spontaneous monochrome method using water and oil inks

8. Research terminology:

Design

Linguistically is a work with a purpose based on planning that results in an activity, a phenomenon or a final product ¹, but technically it is something its aim is its existence even though its elements existed before².

Mono-type

Linguistically is a word divided into two parts Mono in Latin origin means one and the word Type means print ³ & technically means a single drawing without a previous template preparation

Formless

(Form): The visual image of the thing and its composition and composition ^{4,5}, formless is opposite of the last definition , Technically is the technique adopted by the abstract expressionist school and it is one of the postmodern schools emerged in the fifties of the twentieth century after the Second World War, and the most important leaders are Jackson Pollock and William De-konning and Hans Hoffman And another group of artists ⁶, which is also called interactive and emotional, in this technique the artist is freed from the control of the mind on the formation of lines and colors and textures to the technical composition in a purely interactive sense, which makes the recipient of the state of the art without distinctive forms, It turns into a language that is sensibly sensed as music ⁷.

Textile pendants

The art of textile pendants is one of the oldest and most famous textile arts. It is a reflection of its era, expressing the period, civilization and artistic trends.

The art of textile pendants is one of types of applied arts, which have high artistic and aesthetic values to meet the completion of interior architecture,

The design of the textile pendants is very similar to the design of the single piece art paintings in terms of form, content, method of composition, design subject and artistic characteristics, but it is a more difficult and precise work for the skill required in the implementation and the nature imposed by the nature of its usage.

And the design of textile pendants must have some factors that increase the degree of acceptance of audience, such as variety and rhythm.. Etc

The design of the textile pendants is reflected in the shape, color, texture and influences resulting from the multilayered and varied woven spaces as well as through the various materials. The contemporary types of textile pendants reflect the absolute freedom of the designer to choose raw materials and the use of different textile structures and different application methods. To give final product avoids the familiar traditional form.

Digital printing technology: -

Which is known as ink jet printing, in this method design entered into the computer is implemented by one of input tools and applied to the materials equipped for printing to be combatable with printing colorants after taking the order of printing from the computer and this is applied by the color units installed digital print heads with fine headers which jetting colorants on pretreated materials⁹. In the case of our research it would be pre-treated with special components to be compatible with digital printing, which will be reviewed in our study

9. Search frameworks

9.1. Theoretical framework:

It is not surprising that the mono-type emanates from the abstract expressionist movement that emerged after the end of the Second World War, after the standards of the classics and its similarities had gone out of the eruditing schools in the formal beauty and to begin a new start that makes the receiver has emotional feeling without understandable shape, the same feeling of listening to music without singing

If the artist has a desire to deliver any message he has to communicate without forming the colors and lines to the forms of a phenomenon understood by the viewer as a visual perception of form, but it brings him a sense of joy or anger or sadness or stunned by the strokes of colors and lines, The mono-tybe is known as the printing of hand-made designs on smooth surface applied by water or oil inks.

9.1.1. Monotype "types" ¹⁰: -

9.1.1.1. Deletion method:

It would be applied as the following steps:-

Fig 1		1. spreading our ink on smooth surface (the ink is water or oil base) by smooth cylinder to make thin layer of ink
Fig 2		2. Making different textures by removing ink in different places on our thin layer of ink by using any tool for example (brushes and knives)
Fig 3		3. Applying on paper by pressing regularly and gently on the paper surface from the other side and then lift the paper gently from the smooth surface

Note:"It must be considered that any composition would be inverted as mirror after applying on paper"

9.1.1.2. Method of deletion and addition:

It is done as the same last method, but it must be considered relation between the shape and the space in the set of shots on the paper surface to make one structure.

Steps of Method of deletion and addition are as the following:

Fig 4		1. spreading our ink on smooth surface (the ink is water or oil base) by smooth cylinder to make thin layer of ink
Fig 5		2. Making different textures by removing ink in different places on our thin layer of ink by using any tool for example (brushes and knives)

<p>Fig 6</p>		<p>3. Applying on paper by pressing regularly and gently on the paper surface from the other side and then lift the paper gently from the smooth surface</p>
<p>Fig 7</p>		<p>4. preparing the required addition</p>
<p>Fig 8</p>		<p>5. The addition is added as step 3</p>

9.1.1.3. Linear Method:

It would be applied as the following steps:-

<p>Fig 9</p>		<p>1. Spreading one or more colors on the same smooth surface by smooth cylinder</p>
<p>Fig 10</p>		<p>2. Adding paper on colored surface and make pressure by pointed tool on the back of the paper</p>

<p>Fig 11</p>		<p>3. Lifting the paper surface gently</p>
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9.1.1.4. Preparation of textures and back-grounds:

Steps of preparation of the textures and back-grounds as the following:

<p>Fig 12</p>		<p>1. Putting a set of colors and making strokes by using brushes and oil knife</p>
<p>Fig 13</p>		<p>2. putting paper and making pressure regularly by cylinder or irregularly by pointed tool</p>
<p>Fig 14</p>		<p>3. Lifting the paper surface gently</p>

9.1.2. Digital Printing:

Definition:

Printing is by inserting design into the computer any of its input tools and applying them to the materials that are prepared for printing to be combatable with printing colorants after taking the printing order from the computer. This is done by the color units installed by the digital print heads.

The advantages of the type used in our research are as follows:

- Fast performance which responsible for market demands
- No spatial space required unlike conventional methods, only digital memory space is required
- The number of repetitions and colors in the design is unlimited
- Time saving because there is no long pre-setting steps against other methods
- Little bit of wastes of fabric
- Required Inks in printing process are only used so there is very low waste of inks ¹¹
- No paste no waste

9.2. Historical Framework:

After we passed the theoretical framework and in order to prepare for the practical framework, there is connective framework between them, historical in our research items, design & technology

9.2.1. Design "Artistic"

In the search terms, we discussed the problem of immorality and we quickly identified what it was in the context of research. The "formless" was adopted by the abstract expressionist school which emerged in the middle of the last century after second World War and we will have a brief over view with the most important leaders of that school

9.2.1.3. Jackson Pollock

- Birth: January 1912
- Nationality : American

**Short lines about the artist:**

According to bad conditions and crises Pollock experienced during period of World War II led to the creation of his artistic mature. After spending several years working in realistic painting in the 1930s, the transformation in 1939 became a radical shift, with a new look on art. A new look at life and art where he began to adopt abstract expressionism in his works of art on large areas at the same time as the journey of medication of alcohol, where the Psychologist asked him to release his expressions of psychological and mental feelings by using art, Pollock began to release his mental funds and his artistic cyclone by giving him a creation of one of the most abstract art forms in the history of modern art.

One of the most important words of Jackson Pollock "is not the kind of difference how to put color on the painting, as important as expressed by this color; the technique is only a way to deliver a certain expression" ¹²

One of The most important works: -

The name of the work is the rhythm of autumn

Date : 1950

Measurement 226.7 x 525.8 cm

Description : Oil on canvas



9.2.1.4. Franz Klein:

- Birth: May 1910
- Nationality: American



Short lines about the artist:

Franz Klein's life story is like a film; an emerging artist with many hopes and aspirations. He remains immersed for many years until he is engaged in an artistic direction that enables him to achieve great fame overnight and then dies shortly afterwards. Franz Klein was known as an emotional artist from the members of the abstract expressionist artistic movement that was prevalent in New York during the 1940s and 1950s, and presented to the world artists including Jackson Pollock and William De Konning, at first He worked as a painter and landscape to earn money. In the mid-1940s, De Konning and Pollock met him and began to discover his growing interest in his innovative artistic experiences. He began to perform several small preparatory experiments by using the brush and then executed them once directly on the walls of his studio until he reached maximum of His artistic productivity in 1950 as a result of his exhibition in New York,

He became famous in the world of fine art, but his art works are different with many characteristics as "using black and white", "the huge paintings" & "His paintings looked like the writings of letters or numbers that are not readable"

He was not able to describe his paintings orally, but he was able to convey a sense of the recipient's feelings for his paintings ¹³

Four Square:

Is one of the most important works of Franz Klein by using angles in his expression work, and despite what may appear the painting of the sharpness of the landscape, but unique in several properties as follows, show the sense of material drawn on canvas In this work Klein was distinguished by showing the three-dimensional inspiration different to his other peers in that art school and they were fed into the two-dimensional works. He achieved this by visualizing the visual effect of feeling the work through the lines that Suggestive of a lively horizon Vertical and other horizontally ¹⁴

One of most important works:

Name of art work: Four Square

Date : 1956

Measurement 199 x 128.9 cm

Description: oil on canvas



9.2.1.5. Salah Taher:

- Birth: May 1911
- Death: February 2007
- nationality: Egyptian



Short lines about the artist:

After graduating from the Faculty of Fine Arts, the artist began to work in the art of classical art, the art of academic diagnostic portraiture. This did not satisfy his artistic desire to convey his artistic feelings, which were full of artistic momentum. This was not evident on the surface until after his visit to the USA 1956 And that lasted three months where he met the artistic expressionist expression there, but he was up to the extent of exaggeration, which did not like Salah Tahir completely, but he has insisted in defiance of the adaptation of that technique of modern art within the image of mental and life experiences has started many Of abstract expressions formations And its cut but those puzzling then formulates local art world environment with data from the data.

• **The most important of his works:**

Name of work: un-named

History: 1983

Measurement 25 x 50 cm

Oil on canvas



9.2.2. Technology

Digital Printing:

Emerged at the end of the last century is the legacy of digital technological development in the eighties and nineties of the last century have several advantages have been addressed in the theoretical framework

9.3. Practical framework:

9.3.1. Design trials

Design trials created by using deletion method as previewed in our research by using black oil inks

9.3.2. Application by using digital printing

Its steps as the following

- Insert design by one of methods of computer input
- Show on display tool (view)
- Adjust design if it is necessary
- Color compatibility between the original colors of the inputs and colors in the printer, since it is necessary to make any digital controls of colors to show the final product is identical to the entrance without losing any color details such as depth or direction or other
- Implementation of a one-time trial sample

It is not only digital printing method necessary to be in our consideration but also there are initial preparations for each type of fabrics, It is a mixture of polymers that required to prevent many problems which appears during printing

- Sphering inks on surface of fabric "low affinity between ink and fabric"
- Inks over penetrated into the fabric it makes application out of control, it makes The final product not as proposed
- Harsh handle of the final product

9.3.3. Results & recruitments

The results of the printed practical experiments, which were employed by default in the living rooms



Fig 15

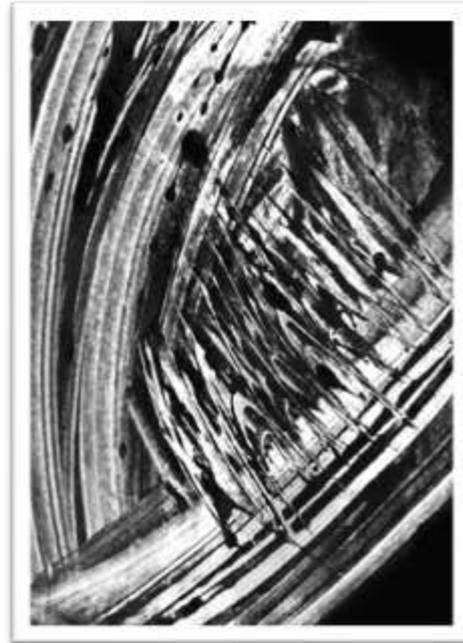


Fig 16



Fig 17



Fig 18

It must be considered the Stages of preparing the design ¹⁶ (final product)

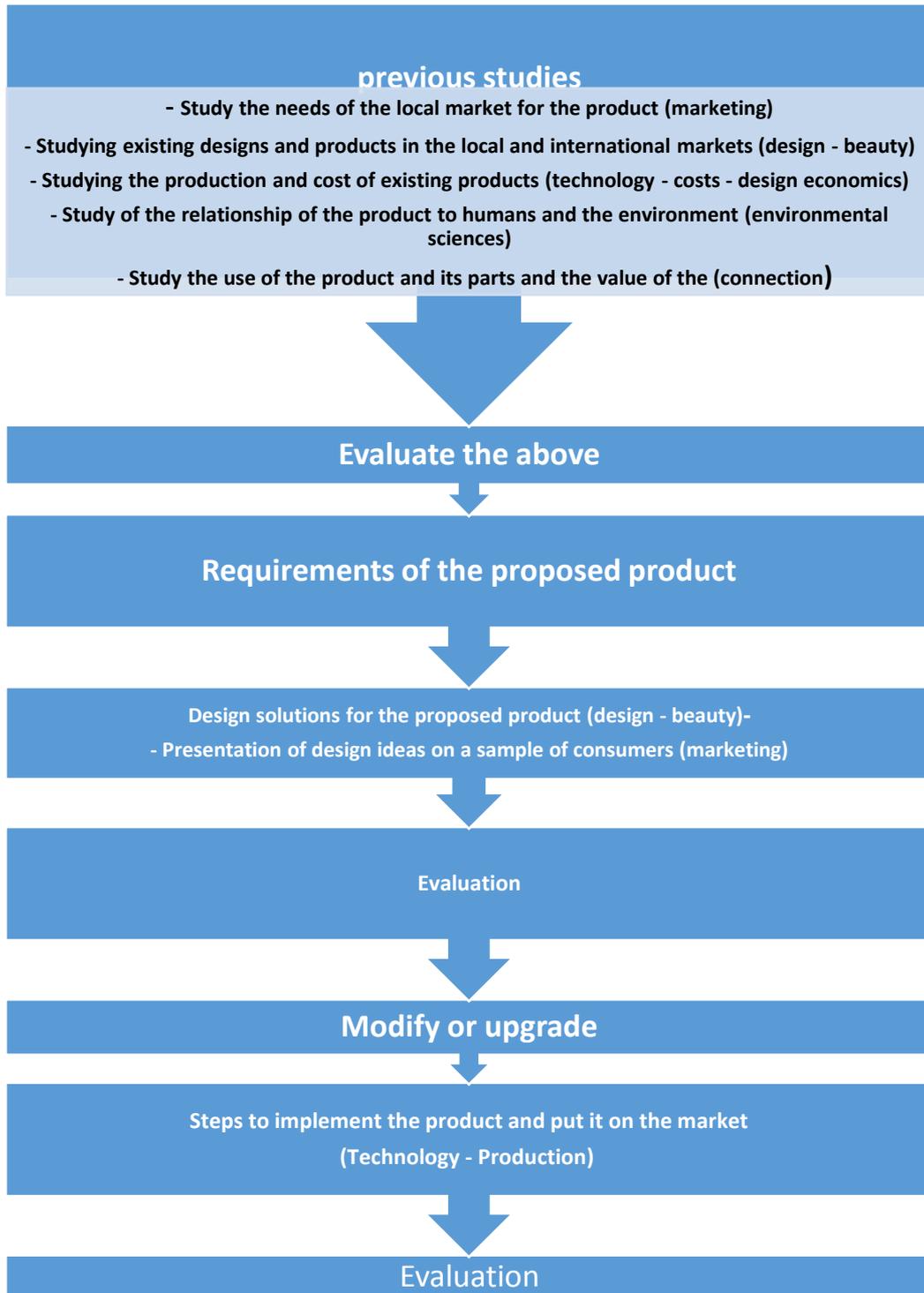


Fig 19

The research team applied the ideas inspired by the designs printed on the outstanding textiles inspired by the mono-type method and applied by the digital printing technology by the program (Adobe Photoshop)



Recruitment Design 1



Recruitment Design 2



Recruitment Design 3



Recruitment Design 4

9.4. Statistical framework:

The product is parallel to the final line of bleeding fish with very equal quality

Comparative item	Current product (imported)	The new product (under study)
Dimension	100 x 70 cm	
Price	200 Egyp.	75 Egyp.
Availability	The non-available can not be re-produced but the buyer is still waiting to import it again	It can be easily re-produced and made available after 48 hours
Innovation	The same forms of imitation and can not be developed only to the taste of the importer	There is a variety of shapes and patterns and the versatility and richness of the product

Table 1

10. Conclusion

At the end of the research, we conclude that the final local product is very close to the market competition on the practical ground in terms of technical, where the design excellence in terms of pluralism and innovative innovation, since it can be implemented for the design of the innovative and desirable in a few hours and is also a competitor in terms of This is in addition to enriching the local market with micro-projects that improve the national output and start moving away from imports. This is what provides the hard currency of our dear country Egypt, which needs to import some of the most extreme necessities. With some developmental ideas that will lead to the rise of our beloved country.

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