

Islamic Architectural Facades and their use in Designing Contemporary Egyptian Women's Clothing

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Introduction :

There is no doubt that architecture is the mother of the arts as called by architects and artists where architecture comprises most of the internal and external artistic and creative activities with its distinctive architectural fronts. It also comprises the creations of wood, marble, metals, etc. with various structural, plastic and functional design solutions. This made architecture a permanent stimulant of artistic creativity and innovation and a source of inspiration in various fields of art.

As for Islamic architecture with all its various aesthetic and artistic values has inspired the world, artists and designers since its emergence. This Islamic inspiration was reflected on various artistic activities, most prominent of which is the "School of Modern Art of Europe" which benefited from and influenced by the Islamic arts artistically and creativel.

At first sight of the designs of Islamic buildings, the viewer is attracted to the special architectural fronts with their elegant creative aesthetic style inspired by endless artistic innovations.

Meanwhile, many designs have emerged in the field of clothing inspired by the various Islamic decoration and textiles till our present day. This emphasizes the rooting of fashion design and its distinctive oriental spirit and highlights the possibility of getting inspired by the Islamic style and its various elements.

Key words:

Islamic Architecture Facades - Clothes Design - Egyptian Women – Contemporary

الملخص:

مما لا شك فيه أن العمارة هي أم الفنون كما أطلق عليها المعماريين والفنانين حيث تحتوي العمارة على أغلب الأنشطة الفنية والإبداعية بداخلها وخارجها بواجهاتها المعمارية المميزة فنيا وكذلك احتوت على إبداعات الخشب والرخام والمعادن ... ألخ بالحلول التصميمية المتعددة لها بنائيا وتشكليا ووظيفيا.

الأمر الذي جعلها مثير دائم للإبداع والابتكار الفني ومصدر من مصادر الإلهام الهامة في مجالات الفنون المختلفة. والعمارة الإسلامية بما فيها من قيم عديدة جمالية وفنية الهمت العالم والفنانين والمصممين منذ ظهورها إلهامات إنعكست على الأنشطة الفنية المتعددة ومن أبرز هذه الإنعكاسات والإستلهامات من الفن الإسلامي "مدرسة الفن الحديث باوروبا" التي إستفادت وتأثرت فنيا وإبداعيا بالفنون الإسلامية (12).

ومنذ الوهلة الأولى عندما نتطلع للمباني الإسلامية يجذبنا الواجهات المعمارية الخاصة بها والمميزة بشكل جمالي راقى في الإبداع والابتكار ومثير بخيالات عدة فنية لا نهائية.

وفي هذا الإطار الإلهامي من العمارة الإسلامية في مجال الملابس ظهرت تصميمات عديدة بمجالات الملابس المستلهمة من الزخرفة الإسلامية والمنسوجات الإسلامية المتعددة حتى وقتنا الحاضر، وهذا يؤكد على تأصيل مجال تصميم الملابس وشرقيتها المميزة وتبرز إمكانات الإستلهام من الطراز والعناصر الإسلامية المتعددة.

الكلمات المفتاحية: الواجهات المعمارية الإسلامية؛ تصميم ملابس؛ المرأة المصرية؛ المعاصرة

Research problem:

The field of clothes design is one of the important arenas in the society which is always exposed to many variables imposed by the technological as well as social development, including the global fashion trends.

Equally, this field requires many visions, sources and ideas of inspiration that match different community environments.

In this context, we are looking for the presence of the eastern Arab heritage among the international fashion lines to emphasize its identity and existence between the colors and trends of the world.

That is why we are urged to focus on the aesthetics of the Arab-Islamic heritage through considering the "architectural facades" as a source of inspiration. It is rare to find researches tackling this matter in a way that catches up with modern fashion and recent designs. Therefore, through this research we try to maintain an artistic vision inspired by Islamic architectural facades that have been always the focus of attention of many designers. Islamic architecture comprises aesthetic features that can be employed in many forms and products, such as "the contemporary practical clothing of the Egyptian woman in an attractive and practical way through a scientific design plan that benefits from the Islamic architectural facades with its decorations and structural frameworks that are reflected in the designs of the women's practical clothing".

Research Objectives:

1 - The research aims to set an analytical study of some of the architectural items and structural systems in the architectural facades in order to benefit from its aesthetics in modern and contemporary designs of the Egyptian woman's practical clothes.

2 - The research aims at forming a set of components inspired by the Islamic architecture with its decorative items in order to reach design solutions for the Egyptian women's practical clothing.

3 - The research also aims at producing collection of designs inspired by the Islamic architectural styles of the contemporary Egyptian women's clothing that catches up with the materials and techniques of the modern era. This emphasizes the aesthetics of Islamic architecture and the possibility to make use of it in designing women's practical clothing to highlight authenticity and modernity.

Research Methodology:

The research follows design experimental descriptive analytical method.

Research Hypotheses:

The research assumes that developing an innovative practical plan inspired by the Islamic architectural facades helps to produce design patterns for Egyptian women's practical clothing and highlights the Arab identity among global fashion lines and enriches the field of clothing for Egyptian women.

Research Limits:

The research will tackle certain architectural patterns that were inspired by the architectural facades and decorations of the Mamluk erain Egypt represented in the "Mosque of Sultan Hassan".

The research will be also limited to the presentation of the design solutions of Egyptian women's practical clothing within the age between 20 to 30 years.

Research Main Topics:

1. Technical analytical historical study of some of the architectural elements of Sultan Hassan Mosque.
2. The design plan of the stages of designing women's contemporary practical clothing inspired by the architectural facades.
3. Design solutions and the results of applying the design system.

First: Historical Study of Sultan Hassan Mosque:

Islamic architecture has been always distinguishable among the various architecture styles that have been introduced to the human civilizations throughout history till present. Islamic architecture was spread in many countries to achieve a unique style among international architecture throughout history. Through its existence, Islamic architecture has shown many architectural and decorative elements that were characterized by diversity, innovation and skillful execution, in addition to artistic and aesthetic value ⁽¹⁾. Such Islamic architectural style was represented in many buildings and mosques through historical periods governed by rulers and sultans of Islamic civilization (Umayyad, Abbasid, etc.) One of the most important architectural manifestations in Egypt is Sultan Hassan Mosque, which is one of the most beautiful Mamluk Islamic buildings due to its splendor and distinguished architectural elements which have been executed with unique accuracy. The Mosque was built in the foot of the Cairo Citadel by Mamluk Sultan (Nasser Hassan ibn Al-Nasir Muhammad ibn Qalawun) which was first established in 751 AH / 1356 AD and was fully established in 764 AH / 1363 ⁽⁴⁾.

The Mosque contains many aesthetic structural values that complement the structural form, doors, sections, openings and windows. The Mosque also contains innovated parts that were executed in various forms of stone, gravel, marble and wood, which represented the most important decorative and architectural parts of Sultan Hassan Mosque and were considered the source of inspiration in designing women's clothes in this research. Following are some pictures of Sultan Hassan Mosque with all its various architectural beauties.



Figure (1)

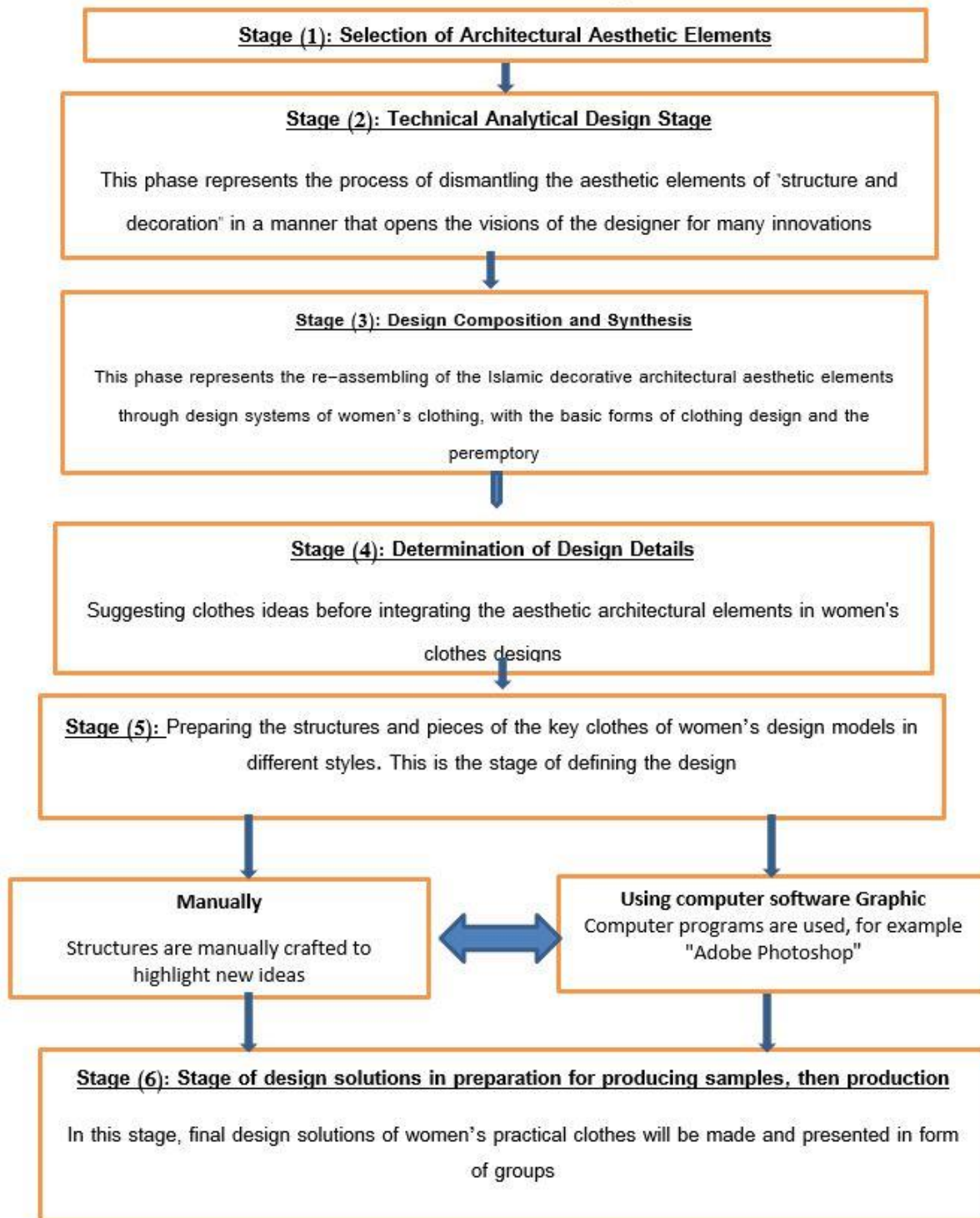
Figure (1) shows my vision to the whole building structure of Sultan Hassan Mosque, which is characterized by luxury, high-rise height and the various decorations of the facade as well as the overall division of window openings and their designs that are characterized by consistency and similarity in the overall design to crystallize the generous Islamic character in the diversity of aesthetics in the Islamic architectural facades.



Figure (2)

The two photos show the entrance design of Sultan Hassan Mosque, in which appears the genius aesthetic designs and the structural frames of the diverse design in the numerous elements with different adjacent pieces. This includes the architectural style of the domes with its radiant and centralized decorative repetition. This is in addition to the decorative Kufic inscriptions, plasterboard profiles, muqarans with decorative profile ranging between protruded and cavernous decorative profiles, geometric decoration of the floors and many other distinctive elements in a surprisingly architectural framework of vision of three-dimensional and two-dimensional design

Design Plan of Developing Egyptian Women’s Clothes Designs inspired by some of the Architectural Patterns Ad Facades of Sultan Hassan Mosque:



First: Selection of Architectural Aesthetic Elements:

The three-dimensional designs of the architectural facades and the decorative two-dimensional ones are sorted visually in this stage by classifying the shapes and images, which are arranged according to their various details. Meanwhile, the focus shall be on architectural design aesthetics, which afterwards shall be the source of inspiration of clothes designs in terms of constructive structure of the clothes or the internal plastic and decorative details. This is made in preparation to innovate a mutual design profile between the architectural style and the designer personality.

Following are some aesthetic images that represent some artistic choices, which are source of inspiration from Sultan Hassan Mosque.



Figure (3)

The images show various architectural elements represented in the entrances, doors and exterior and interior facades with its numerous elements in terms of shape and function with its various decorative and colors contents.

Second: Technical Analytical Design Stage

This stage represents the biggest focus on the elements of inspiration targeted directly by the designer. The designer believes that he can embody such elements in new and contemporary visions and images based on both, his point of view and his knowledge of fashion and its components in such period. These components include textile, technological methods in clothing production, accessories, textile printing techniques, dyeing, embroidery, sewing, various designs and integration of materials in different ways according to the general trend of fashion.



Figure (4)

Third: Design Composition and Synthesis:

At this stage, the visions inspired by the various architectural elements and the structural form of the clothes are combined with multiple images through the personality of the designer, who controls the elements in a distinctive and innovative manner that copes with the fashion trend. Eventually, this phase begins with drawing the initial sketches of the model design; and then considering the pattern of the pieces put on the model structurally through the sizes and lengths of the clothes and the general personality of those wearing the clothes from the designer's point of view. Meanwhile, the designer makes an initial imagination of his inspiration from Islamic architecture and the visual effects thereof. This appears in the designs and the internal decorative pattern of the clothes structure as well as the designer's choices of the clothes supplements and accessories in a comprehensive way that reflects the designer's new and innovated ideas in order to attract the consumer.

The following sketches illustrates a design ornamented by visual effect of the contemporary Islamic architecture.

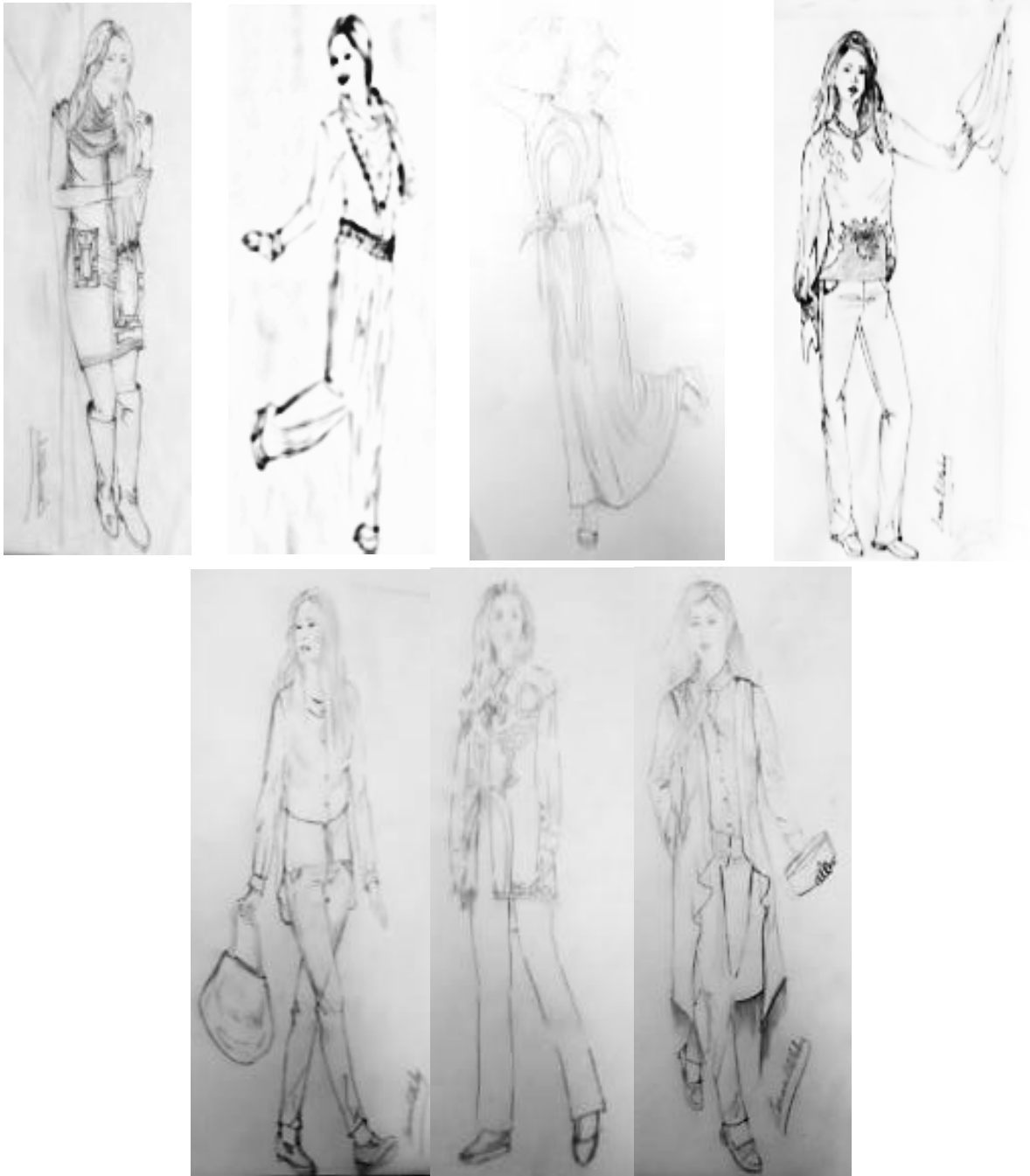


Figure (5)

Fourth: Determination of Design Details:

In this stage, best sketches are selected from the designer's point of view, which were previously prepared, in order to identify the proposed color combinations for such sketches. Also, the designer provides the initial imagination of the types of fabrics that can be used in the design in terms of weight, looseness, transparency and fabric composition of the different pieces of the clothes.

This stage also comprises the determination of the style of printing, embroidery or decoration by multiple patterns according to the designer's vision.

The following is a presentation of the proposed color group inspired by the architectural elements:



Figure (6)

Fifth: Preparation of Structures and Pieces of Key Women's Clothes of Design Models in Different Patterns

At this stage, a final draft of the design structure of the clothes should be made through previous sketches. This is can be done either manually, by using graphic computer programs or by using special designing programs. Meanwhile, the designer highlights the design details along with its different aspects of the clothes represented in the distribution of colors, expression of material types, the executive drawings of production and the implementation.

The designer then starts to create multi-color visions of the same design in the form of mariages to emphasize the aesthetic spirit that emerges out of using various colors in one design and thus attracts the consumer.

Following are the proposed designs as a result of applying the Design Plan:

First Design: This design consists of two pieces inspired by the Islamic decorative constructive architecture. This inspiration appears in the style of the ornamented blouse from the bottom with an opening uncovering a printed design by the Islamic architecture of Sultan Hassan Mosque.

Applique embroidery has been applied to the blouse and bracelets using a geometric Islamic unit inspired by the Mosque's decorative elements, along with simple trousers.

Also, an accessory has been designed using the same decorative unit in the form of a necklace made of precious stones of the same design colors. The sketch was colored as per the colors of the Mosque's Islamic architecture.



Figure (7)

Second Design: The design is inspired by the clear Islamic engineering element located at the wooden gate of the Mosque, which was used in the pocket and the right half of the blouse. This element also appears on the bracelets and the lower part of the blouse in different repeated distributions in form of ribbons.

It is noted that the two halves of the blouse are not similar along with the jeans and a scarf of the same color of trousers. These trendy fashionable colors are derived from the colors of the Islamic architecture of the Mosque.



Figure (8)

Third design: This design consists of pieces made up of blouse, wide pants and shawl. Inspired by the Mosque's architecture, Islamic muqarnas is widely designed on the pant waist and the shawl. The design colors were inspired by the colors of Islamic architecture. A set of hand accessories has been designed of the same colors as those of the clothes to match together.



Figure (9)

Fourth Design: This design consists of pieces made up of long dress with waist belt. The dress design is inspired by the interior architecture of Sultan Hassan Mosque as well as the shapes of famous Islamic domes and pillars. This is applied by silhouette technique and the constructive structure and using the same in printing and drawing on the front and the bottom of the dress. Same technique was applied on designing the shape and color of the belt. The colors of the design were inspired by the colors of the Islamic architecture in Sultan Hassan Mosque and the chosen color pallet.

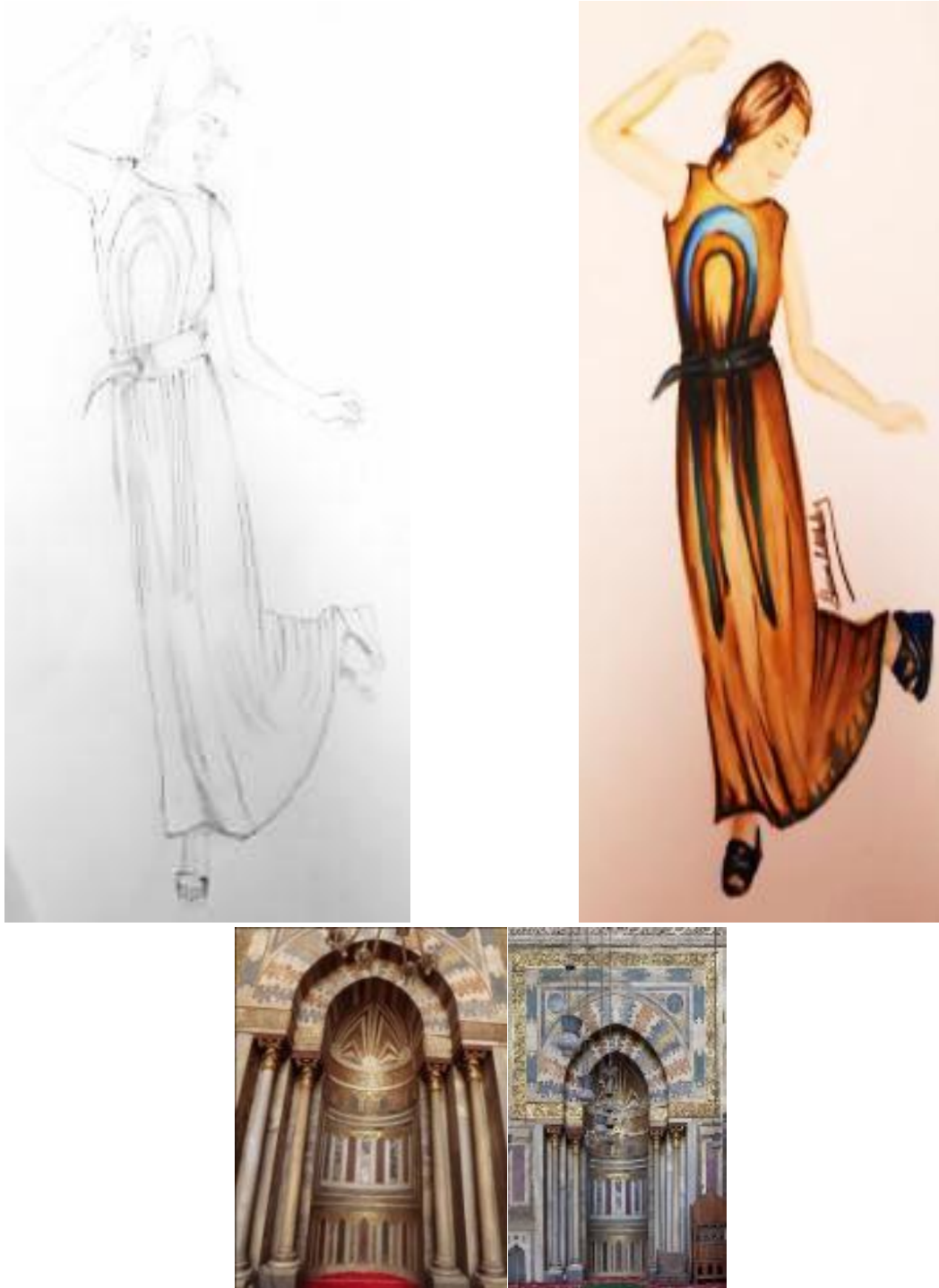


Figure (10)

Fifth Design: The design consists of two pieces. It is inspired by the decorative constructive structure of the Islamic architecture represented in the blouse, which is embroidered by the applique technique on the front of the blouse, sleeves and collar. The way of locking the blouse shows an inspiration by the Mosque's engineering Islamic decoration, overall constructive structure, decorations on the doors and the shape of Islamic domes.

Applique embroidery has been applied on the blouse and cuffs through an Islamic engineering unit inspired by the mosque's decorative elements along with simple jeans.

The sketch color was influenced by the colors of Islamic architecture of the Mosque.



Figure (11)

Sixth Design: The design consists of three pieces of trousers, shirt and a long jacket of various lengths and shawls. The design of the shirt was inspired by the interior architecture of the Sultan Hassan Mosque and the decoration of the domes and the famous Islamic columns, inspired by its colors and the overall structure of the shirt. , And use it in the color of the long jacket and shruship from the bottom of the jacket of different lengths with the design of simple jeans to suit the contemporary practical woman.

We find that the clothing accessories of the bag and shoes of the same design colors to conform to the proposed model.

The colors of the design were inspired by the colors of the Islamic architecture in Sultan Hassan Mosque and the chosen color pallet.



Figure (12)

Seventh Design: these design features the engineering Islamic element appeared in the wall shape, color and decorations. These elements have been depicted in the blouse in a non-symmetrical way by printing on the front half of the blouse and on the opposite sleeve and vice versa on the back; using straight lines in brown and beige colors as appeared on the wall. The decorations of the Mosque have been used to ornament the chest line and blouse bracelets along with thin brown belt in the middle.

The blouse shows non-symmetrical halves along with simple jeans.

As for the shoes and bag, they are of the same color to match with the proposed design.

These colors are also inspired by the colors of the Islamic architecture of the Mosque which in line with fashion trends.



Figure (13)

By this, all the stages of applying the Design Plan to produce innovative design patterns inspired by Islamic architecture have become clear.

Sixth: Production of Samples:

At this stage, the executive drawings and the patrons are set to produce the initial sample of the final design to study its advantages and disadvantages and the modifications that may be made to develop the design and its use.

Also, graphic designers get ready for packaging, wrapping and displaying the designs and prepares mannequins to create a catalogue of the design group to start marketing for and advertising campaigns.

Research results:

After completion of women clothing design group, which is inspired by the Islamic architectural façades, the proposed designs and materials were presented to two specialized groups of people to know the validity and success of the research and to know the extent of acceptance of the proposed designs inspired by the Islamic architecture.

First, the questions addressed to specialized designers and experts in the field of clothes design and marketing:

1. Structure of the design
2. The success of using the element of inspiration of Islamic architecture facades in design and decoration
3. The design shows the features of Islamic architectural heritage and façades in contemporary fashion
4. Using decorations and inspiration from the Islamic architectural facades adds an aesthetic and essential role in the design
5. Good distribution of decorations and their implementation enriches aesthetic design
6. The design meets contemporary trendy fashion
7. The design is appropriate for the target age group
8. Appropriate clothing functionality for the target group
9. The success of the inspiration of the color pallet by Islamic architectural facades colors and their use in clothes designs
10. Conformity of the design colors, decorations and color palette, which are inspired by the Islamic architectural façade with the trendy fashion
11. Conformity of all types of design materials needed for execution
12. General design and accomplishment of research objective

Second, the questions addressed to female consumers and specialists

1. Inspiration by Islamic architectural facades
2. Good distribution of decorations and their implementation enriches aesthetic design
3. The design meets contemporary trendy fashion
4. Acceptance of the used design and palette colors inspired by the Islamic architectural facades
5. Appropriateness of the design to fit the target age group
6. Achievement of clothes functionality for the target group
7. Conformity of all material types for the proposed design
8. Acceptance of the design and the possibility of being worn

The results of these interviews are presented and analyzed as follows:

Verification of Tool Efficiency:

The questionnaire was presented in its initial form to 25 of professors, specialists and experts in the field of clothing and designs, in order to express their opinions about the language of the questionnaire, the soundness of expression and comprehensiveness of the statements. The questionnaire has been graded 0.9151, which is a high percentage that affirms its sincerity and validity to apply.

Results of Statistical Analysis:

The analysis of the study variables and examination of its hypotheses were accomplished through the questionnaire's main topics about the proposed design. The researcher calculated the average and the quality coefficient of each item of the questionnaire using the total recurrences of each element according to a three-scale index. The targeted specialists and experts responded to the questionnaire as follows:

Table (1) Weighted Averages and Quality Coefficients of the Opinions of Designers and Specialists in the field of Clothing Design and Marketing of the Proposed Designs in relation to the Elements of the First Topic of the Research

Response Phrase	Appropriate	Somehow Appropriate	Inappropriate	Total weights	Average	Quality coefficient%	Degree of Appropriateness
Structure of the design	165	4	6	518	2.89	87.0	Appropriate
The success of using the element of inspiration of Islamic architecture facades in design and decoration	117	21	37	430	2.40	80.0	Appropriate
The design shows the features of Islamic architectural heritage and façades in contemporary fashion	136	32	7	479	2.73	86.7	Appropriate
Using decorations and inspiration from the Islamic architectural facades adds an aesthetic and essential role in the design	104	51	20	434	2.47	81.0	Appropriate
Good distribution of decorations and their implementation enriches aesthetic design	139	29	7	482	2.73	81.2	Appropriate
The design meets contemporary trendy fashion	127	30	18	459	2.67	80.9	Appropriate
The design is appropriate for the target age group	147	8	20	477	2.72	81.1	Appropriate
Appropriate clothing functionality for the target group	140	20	15	475	2.70	81.1	Appropriate
The success of the inspiration of the color pallet by Islamic architectural facades colors and their use in clothes designs	162	11	2	510	2.95	85.9	Appropriate
Conformity of the design colors, decorations and color palette, which are inspired by the Islamic architectural façade with the trendy fashion	146	19	10	486	2.74	82.0	Appropriate
Conformity of all types of design materials needed for execution	155	11	9	496	2.71	85.0	Appropriate
General design and accomplishment of research objective	167	5	3	514	2.99	98.9	Appropriate
The validity of design for marketing and consumer acceptance	160	11	4	506	2.90	97.2	Appropriate

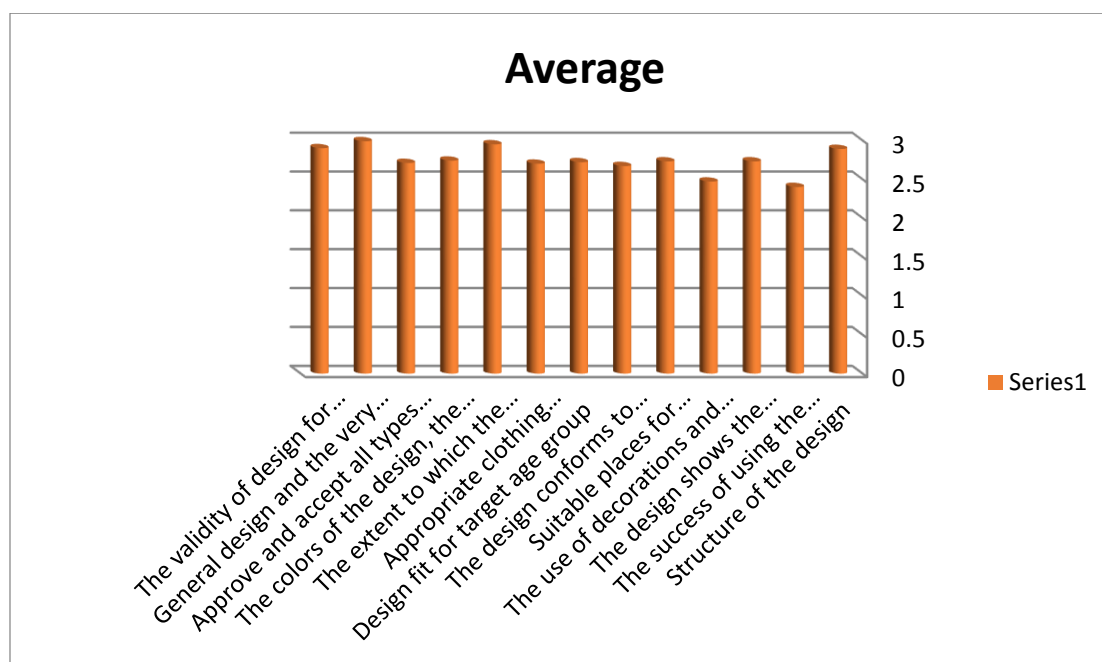


Figure (1) shows the weighted averages of the questionnaire items according to the opinions of specialists and designers about the proposed designs

The above table shows the extent of agreement between designers and experts on the suitability of the proposed designs for marketing. The coefficients of agreement ranged from 80.0% to 98.9% and the average ranged between 2.99% and 2.40% indicating the achievement of the objective of the proposed designs as per to their opinions.

Table (2) Weighted Averages and Quality Coefficients as per the Opinions of Designers and Specialists on the Proposed Seven Designs

Response Designs	Appropriate	Somehow Appropriate	Inappropriate	Total weights	Average	Quality Coefficient%	Degree of Appropriateness
First Design	299	22	4	945	2.96	92%	Appropriate
Second Design	301	21	3	948	3.05	90%	Appropriate
Third Design	325	-	-	975	3.96	100%	Appropriate
Fourth Design	324	1	-	974	3.54	98%	Appropriate
Fifth design	321	4	1	972	3.50	96%	Appropriate
Sixth Design	311	12	2	959	3.11	91%	Appropriate
Seventh Design	320	3	-	968	3.23	94%	Appropriate

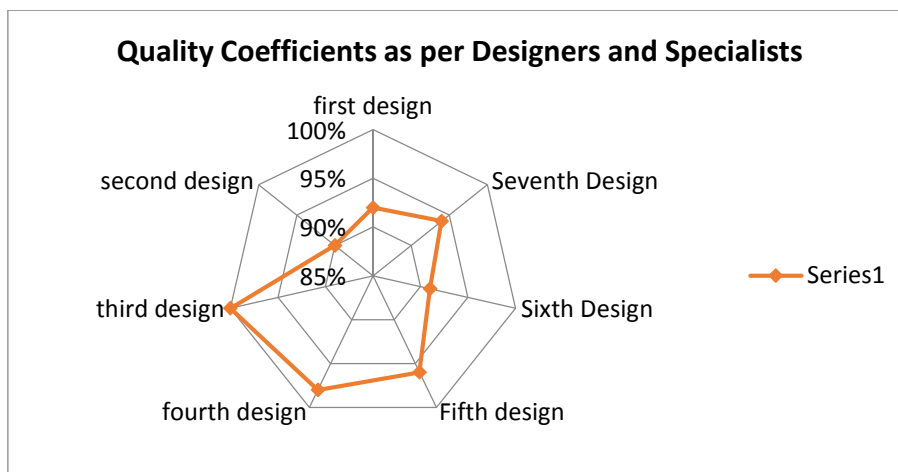


Figure (2) Weighted Averages and Quality Coefficients according to the opinions of Designers and Specialists about the Seven Proposed Designs

The previous table shows the designers and experts' agreement on the proposed seven designs showing high quality coefficients of "Appropriate" scale ranging between 90% - 100% and the average values between 959-3.96.

Design (3) ranked the First scoring 100%; while Design (4) ranked the Second scoring 98%; and Design (2) ranked the Third scoring 90%.

Table (3) Weighted Averages and Quality Coefficients for the Second Main Topic related to Female Consumers

Response Phrase	appropriate	Somewhat appropriate	inappropriate	Total weights	Average	Good coefficient%	Degree of appropriateness	Ranking
Structure of the design	132	85	28	594	2.42	90.5	Appropriate	7
Inspiration by Islamic architectural facades	153	69	23	620	2.53	93.0	Appropriate	6
Good distribution of decorations and their implementation enriches aesthetic design	184	47	14	660	2.69	98.5	Appropriate	1
The design meets contemporary trendy fashion	162	67	16	636	2.60	97.0	Appropriate	3
Acceptance of the used design and palette colors inspired by the Islamic architectural facades	140	58	47	583	2.38	90.0	Appropriate	8
Appropriateness of the design to fit the target age group	152	75	17	623	2.56	94.0	Appropriate	5
Achievement of clothes functionality for the target group	150	76	19	621	2.53	93.0	Appropriate	6
Conformity of all material types for the proposed design	172	61	12	650	2.65	98.0	Appropriate	2
Acceptance of the design and the possibility of being worn	167	53	25	632	2.57	96.0	Appropriate	4

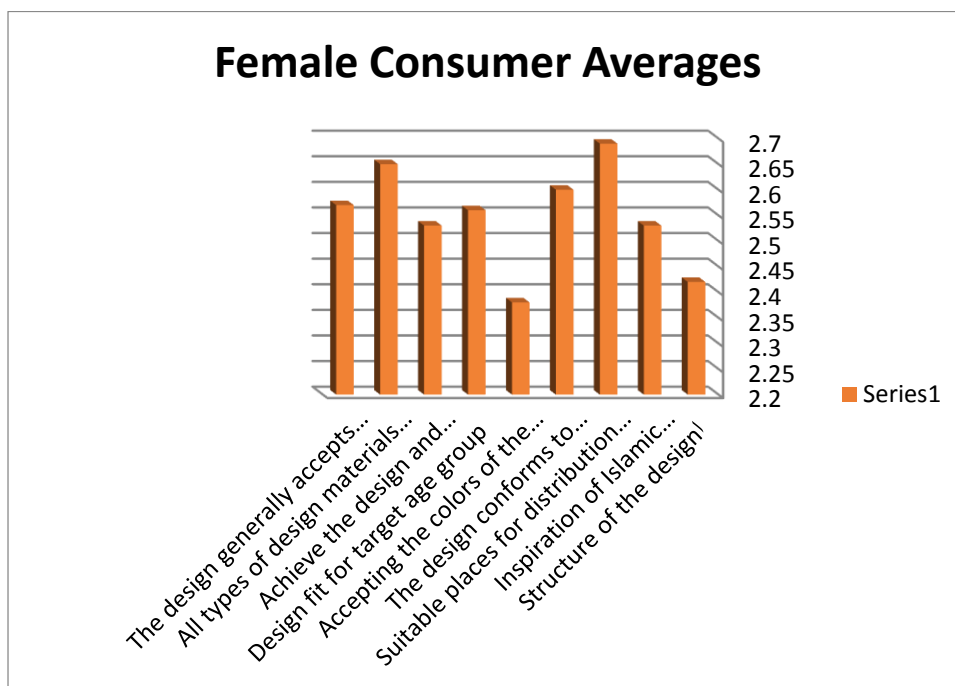


Figure (3) shows the Weighted Averages of the Questionnaire Items as per Female Consumer Opinions about the proposed Designs

The above table shows the female consumers’ agreement of the suitability of the proposed designs for marketing. The coefficients of agreement ranged between 98.5 to 90.0% and the average ranged between 2.38 to 2.69 indicating the achievement of the objective of the proposed designs according to their opinions.

Explanations of the Results Associated with the Hypotheses Validity Test:

The first hypothesis: "There are differences of statistical significance between the responses of specialists on the executed designs in relation to the employment of Islamic architecture in women's clothing"

In order to validate the hypothesis, the **chi-square** test was used.

Table (4) shows The results of the chi-square test demonstrate the responses of specialists and experts in the proposed designs

Suggested designs	chi-square	The degree of freedom	Coefficient of compatibility	Level of significance
Total designs	28.247	12	0.372	0.01

The results of the previous table indicate that there are significant statistical differences between the responses of specialists on the proposed designs where Islamic architecture has been employed in in women's clothing. As per these responses, the value of **chi-square** (28.247) and the level of significance among them (0.01) which indicates the validity of the hypothesis.

The second hypothesis: "There are differences of statistical significance among female consumers regarding the designs executed and inspired by the Islamic architecture in women's clothing"

Table (5) shows the results of the "chi-square" test indicating the differences between the female consumers on the proposed designs

Response designs	Appropriate	Somehow Appropriate	inappropriate	chi-square	The degree of freedom	Level of significance
first design	166	61	18	43.067	16	0.01
second design	141	82	22			
third design	116	62	67			
fourth design	131	89	25			
Fifth design	151	81	13			
Sixth Design	148	78	19			
Seventh Design	160	49	36			

The previous table shows significant statistical differences between the responses of the female consumers on the proposed designs, where the value of **chi-square** (43.067) is a function value at the level of significance = 0.01 indicating acceptance of validity of the hypothesis.

The third hypothesis: There is a positive correlative relationship between the opinions of specialists and the opinions of female consumers on the designs executed by e themploying Islamic architecture in women's clothing

Table (6) shows Pearson correlation coefficient results to show the relationship between the opinions of specialists and female consumers

Female Consumers' opinions	Specialists experts and Opinions	Relationship direction	Significance
	Coefficient of correlation R	positive	Function**
	0.8051		

The results of Pearson Correlation test in the previous table indicates that there is a statistical significant correlation between the approaches and opinions of the specialists and female consumers towards the executed designs. The value of "R" recorded (0.8051) of Significance 0.01 indicating the validity of the hypothesis.

Summary of results:

1. A study is carried out about Sultan Hassan Mosque in Egypt to shed light on its distinguishable aesthetic elements with its internal and external architectural facades.
2. The research presented a scientific plan featuring the design stages inspired by the internal and external architectural facades represented in Sultan Hassan Mosque.
3. The research presented a set of technical solutions inspired by the Islamic architecture of women's contemporary practical clothing by applying the proposed technical plan in order to emphasize its validity for application in the field of clothes design and fashion.

Recommendations:

The research recommends paying more attention to Islamic architectural credit in Egypt with its aesthetic values that provides good source of inspiration to develop innovative and distinctive designs that emphasizes the Egyptian identity worldwide in the field of design.

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