

The Design of an Augmented Typographic Experience for E-Marketing of Women Textile Fabrics

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Abstract:

E-Marketing has a significant effect on the marketing efficiency of products and services. The success of effective e-marketing of textile fabric is based on the effectiveness of the ideal recruitment of suitable advertising function of the textile product to highlight its aesthetics, features, surface effects, and varied colors. Due to the intensified competition among different advertising agencies, it is necessary to provide marketing and advertising solutions that can confront challenges and affect users' attitudes effectively towards products and services. Therefore, in this research, we resort to using augmented reality advertisement as an e-marketing effective function for women textile fabrics. The research problem is concluded in studying the contribution of Typographic Textile Fabrics Design on users' acquisition of marketing positive attitudes towards augmented implementation. The research objective is to prepare and use an electronic application to market textile fabrics designed by using Typography. To answer questions of the research and achieve its objectives, follow the experimental methodological Research on designing an augmented reality program to market Typographic Textile Fabrics by preparing and designing an augmented electronic application to study its impacts on the category of users attitude, which requires preparing attitude measurement that include (number of phrases to measure the attitude of this category members towards Augmented Application used for e-marketing of Textile Fabrics. The study concluded that the design of Typographic textile fabrics provides a positive user attitude for e-marketing augmented application.

Keywords:

Augmented Reality, Typography, E-Marketing, Textile Fabrics, Women Fabrics, Digital Marketing

Paper received 10th July 2019, Accepted 15th September 2020, Published 1st of October 2020

1- Introduction:

E-marketing (Digital Marketing) is one of the most notable ways and most effective of modern communications technology, which seeks to make augmented marketing via the internet a concrete sell and purchase reality via electronic media by using Smart Phones, Tablet or other devices. The development of the digital era led to a focus on augmented reality technology as one of the most notable electronic marketing means of products depending on movable and interactive portraits. Due to the domination of smartphones and electronic tablets on users, augmented reality technology becomes electronic marketing and advertising means that has an effective role in marketing products in general.

To encourage users to watch the advertisement, it requires suitable stimulation to be attracted to the product. Augmented reality is distinguished by impress, effectiveness, and ability to remind user by the advertisement, as the idea of integration among virtual elements in a physical world of the user is a deviation from traditional styles of advertisement as it allows user to indulge in the

augmented environment and the actual handling with a product meant to market as an effective alternative for the full industrial environment or real marketing processes that cost time and effort. Textile products in general and Textile Fabrics in particular are one of the most important requirements in life, as textile industries are considered one of the Egyptian economic pillars and one of the most important industries in Egypt. It was necessary to connect this industry to modern technology in the field of design and produce textiles and use it in a way that enriches the aesthetics of Textile Art. (Amany Mohamed Shaker 2012)

To show women textile designs in serious, innovated and modern shape and to market it in a modern electronic way compatible with the digital era, the research resorted to using Typography as the main component to design women textile fabrics for its visual ability and innovative aesthetics and optical effects depending on fonts and its shape, and use augmented reality technology of electronic marketing for that textile fabrics innovatively and effectively to achieve

impression, effectiveness, and reality to shape these fabrics and add innovative and effective specifications of augmented reality technology to it, as it allows to show it in 3D view enables the user to interact with it by rolling the 3D model, zoom in and out the textile as want, and choose a suitable design among several designs provided in the application, besides the possibility to buy easily and the possibility of choosing several options according to the need of each user.

2- The problem of Research:

The problem of Research is concluded in answering the following question:

- Does the design of Typographic textile fabrics contribute in provide user marketing a positive attitude for augmented application?

3- Objective :

The research aims to prepare and use the electronic augmented application to market textile fabrics designed by using Typography.

4- Importance:

- The research provides a new vision to exploit typographic aesthetics in innovating modern textile fabrics for women's clothing.
- This study contributes to enriching the e-marketing field for textile fabrics by providing modern design solutions inspired by Typography in developing a competitive marketing way.
- Contributes to highlighting the importance of typography in textile design and its positive role to attract users for augmented applications.

5- Delimitations:

Innovating an augmented digital application that specially designed and prepared for experiment and to upload it in the "Play Store" to be available for search and to show typographic textile designs designed for women's clothing in particular on 3D Style via smartphone or tablet application.

6- Methodology :

The research followed the experimental methodology in designing an augmented reality plan to market typographic textile fabrics by preparing and designing an augmented electronic application to study its influence on users' attitude, while this matter required to measure attitude that included (number of phrases) to measure their attitude towards the application.

7- Theoretical background

- **Augmented Reality and E-marketing Processes:**

The development of communication and information systems imposed an observed growth and development in the marketing world, as the ways of e-marketing has developed effectively these days and becomes a distinguished entrance

that characterized by ease and preference for most of the users, so it became one of the most important ways fulfill marketing goals of companies as it has critical opportunities at local and global levels to promote goods or services, therefore, it became the most important advertising media at the current time.

Marketing means became more effective, easier, and more accompanying means in the modern digital era. Advertising agencies seek to develop current environmental marketing systems to reach the best forms of influence and effectiveness and suitable persuasion of product or service via influencing advertising ideas using modern electronic means that became an integral part of users' daily life.

(Abu Fara 2004) has defined E-marketing as it is "managing the interaction between organization and customer in space of virtual environment that is based on internet technology mainly to achieve mutual interests". (Negm 2004) has defined It as it is "effective development and using process according to the clear digital vision and the remarkable ability for digital marketing resources and available tools on the internet to achieve competitive advantage in the electronic business market. Recent years have fulfilled a developed launch of augmented reality technique, as this technique has employed to serve advertising industry and e-marketing of various products and services as it received large attention for its benefits and features that enrich the effectiveness of advertisement and enhance the response of user towards the advertisement. (Shimaa Salah Sadek 2018).

As it depends on integration between the real environment of the user and the virtual product model by processing data in digital form and show it via one of the applications that designed especially for this by programmers depending on implementing the idea of advertisement maker in the way that considerably allows interacting by the user. According to the reality of the 3D model, the effective employing that allowed by application and the effectiveness and importance of product is reflected on the quality of augmented experience and its behavioral and psychological impact on the user, which affect its relation with company and product, consequently, inflating its income value. It became an important tool for e-marketing as it proved its effectiveness to spread in a current era such as e-marketing mean that allow the indulging of the user and its self-interact with the experience in an effective way that enriches the persuasion of the product as it has effective features allow the user to recognize product virtually while it is

similar to real user experience as it allows the user all dimensions that make him feel the product reality, features, and components. Rather, it makes him coexist with the product effectively through a virtual process in his physical reality without entering actual purchasing phases that result in many undesirable efforts and annoying factors that require time from the user, he may dismiss it through augmented experience.

- **Advantages of E-marketing:**

- The possibility of developing a relationship with customers very much, as the constant interaction is available, nevertheless, some customers resist it and consider it intrusive and violate privacy, but the use of voluntary reporting techniques becomes increasingly accepted among people particularly among those on commercial sites.
- Using e-marketing for gaining customers to fulfill great benefits to achieve selling on a site and gain customer loyalty.
- The ease of obtaining any information related to the product, and the possibility of obtaining the required product in a short time and cross the border without regard to the place of product, which leads to the product became global and promoted so fast.
- Open the way of e-marketing for everyone and not limit that for known huge companies, but a small company or normal individual can participate in marketing easily.
- Low cost and easy implementation in comparison with traditional marketing. The possibility of order products in a direct way by sending a request via the website of the company, while traditional marketing customers cannot directly order products.
- The ease of show all products and services of the company via website, while it is difficult in traditional marketing due to the need for a wider place to show it.

- **Augmented Reality**

It is known as a type of digital technology based on supplying virtual models and its related information in a user real environment to provide him additional information and fulfill full indulging. (Ibtihal Quqandy 2018).

Mahony, S. O. (2015) has defined it as it is "integration of virtual information in user physical environment so that information will be viewed as it is in the real environment. Augmented reality technology is considered modern technology based on Computing visions of integrating sound, video, graphic, and other sensors that are based on some elements in the physical environment to provide a unique experience in the real world.

- **Advantages of Using Augmented Reality Technique:**

- Attracting a large number of users and developing participation, it allows the user the possibility of assessing product quality and effectiveness, which allow more freedom space to make a suitable decision so the user becomes a brand ambassador. (Demarquis 2004)
- Allow users a high degree of freedom of experience as much as wanted and it eliminates sellers' pressure and their attempt to incite purchasing. (Uva et, al. 2011)
- Highly allow users to share their opinion directly through the feedback option that is available on augmented applications previously. (Mohamed Mustafa 2018)
- Virtually show physical products in the user's physical environment to see and examine it.
- Elements 3D format, as it shows products in a realistic model that make the user feel realistic of product or service.
- Create a real image for the user according to the dynamic and interaction of advertising elements.
- Spread according to using the website in marketing with the lowest cost possible, besides customers can enjoy the fascinating and entertaining experience.
- Save time and effort as it allows users an augmented marketing process at any place whether in his home, work, or other places.
- The ease to find the advertisement among users, besides the easy to try the same experience in terms of smooth dealing with electronic applications and programs without the need for prior training.
- The preferred method for users who suffer from problems and difficulties related to mobility.
- Suitable for hygiene requirements as it allows us to try the product without using it instead of the previous user, therefore, it saves the user from infection.
- Help to create a particular emotional connection with customers. Unlike pictures or cross or long painting advertisements on websites, augmented reality advertisements are marked by its vibrant interaction.
- Low cost augmented advertisements; augmented reality advertisement usually comes with suitable prices and provides overwhelming feelings and sense more than the printed advertisement.

- **Various Applications of Electronic Augmented Reality Technology:**

- **Virtual Fitting Rooms: Augmented Fitting**

Rooms - Magic Mirror: It is used as virtual fitting rooms that include 3D pictures provide customers an opportunity to see how they will appear during their using one of the products, ready-made clothing, shoes, or others. This type requires the user to stand correctly above the angle of the computer camera so that he can enjoy the application or interact with it and try several types of products. (Baek, yoo & yoon 2016) it is a substitute for traditional fitting rooms in stores, as this method uses Dressing Room Virtual App with some interactive tools such as big displays that equipped with front cameras, this technique also uses Augmented

Reality Browsers in case you exist inside stores (Block and McNally 2013). It does not require a relatively high level of self-interaction, as the user does not need to download a particular application, rather he try the experience once he stands in the designated place in front of digital camera that enables him to interact with digital elements and see himself in a mixed environment with that virtual elements, Lynx Axe Company in the United States of America used it to allow users in Victoria Station in London to speak with digital angels in their advertising campaigns. (Russell 2012) .



Figure (1)



Figure (2)

- **Augmented Reality in Packaging:** The product package is designed to be fitted for augmented experience as it allows users to scan Barcode or Qr Code of the product they want to buy such as food product packages, home appliances, children structural games ... etc. while they are disassembled and packaged in paperboard and carton ... etc. (Sahin and Abdullah 2016). Then you can see the final product in 3D at all its features and using conditions on a screen and fixed and movable

full assembling shape. (Uva et, al. 2011) According to the nature of that augmented experience that is used to show product components, construction, how to use it, and others that follow-up, in turn, the nature of augmented advertising message the desired to try. This requires a high level of effectiveness as a user is required to download a particular application designed to try this experience previously.



Figure (3)



Figure (4)



Figure (6)

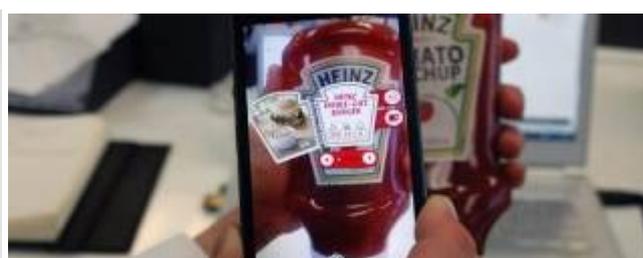


Figure (5)

- **Augmented Reality Advertisement inside Malls via Digital Screens (Bogus window):** A digital screen is required in the place

allocated to try augmented advertising experience and the screen size is differ according to place and nature of augmented

experience inside the Mall, therefore, it does not require a high level of self-interaction by the user as it displayed in front of him directly and experience it once he stands in the spatial place allocated for the experience. (Feng & Mueller 2018). For example, an advertisement for Visa Company inside the



Figure (8)

- **Using augmented reality in various print packaging (Active print packaging):** Volkswagen Juiced Up billboard advertisement is the best-known example for this kind as there is a beetle is flying in the fresh air, and also IKEA catalog that allowed users to install virtual furniture units in user physical reality in his apartment or physical



Figure (10)

- **Using augmented reality in Window Displays (Active print packaging):** Augmented reality technology is functioned in window displays as it defines a particular place for the user to stand and allows him to save pictures and log in the website through this experience, and it requires a low level of interaction by the user.
- It is considered a useful addition for stores, trade fairs, and other places, as augmented reality games attract users' concern, create interaction, and increase the awareness of



Figure (11)

mall, which allows the emergence of enormous animals inside the mall on a screen that display users playing with these animals to promote "experiencing something new with Visa". (Scholz and Smith 2015, Shimaa Salah 2018).



Figure (7)

environment. (Scholz and Smith 2015). There are some applications allow the user to show home products and furniture and decorate home spaces, also provide various substitutes for the same product according to customer's need such as a large number of fabrics as a substitute for chair upholstery that available for sale. (Juan et, al. 2013)



Figure (9)

trademark. Games are allocated to reflect the promotion campaign of a trademark that includes phrases that encourage the user to take an action and share the product very well with busy persons who do not have time for browsing an article or product catalog. AR Window can provide useful information such as technical details and educational programs and advantages besides promotional and particular offers.



Figure (12)

Typography and Origin of Writing:

The origin of typography is from Greece as it is a Greek word divided into "Typo" as a place or position and "Graphia" as Writing (Ibrahim Mahmoud 2004). The typography is considered an art and technique used in design letters and arranges it by using a various group of techniques; it means to arrange and downsize the font and spacing between lines, letters, words spaces between letters, letter length, height and size, and discrepancy, it can be studied according to font and how to use it and we can ignore standard by creating new typographic patterns. (Shimaa Salah 2018). Typography appears in designs by creating optical effect based on font patterns and different sizes (Italic - Capital - Lowercase - Colors) i.e. it is the art of employing letter to shape a kind of mutual coordination among each other by repeat it and produce a simple artistic value without complication. (Frederick W. Hamilton 2009)

writing is one of the most important discoveries that known to man, as it prepared to document knowledge, culture, and civilization transmitted throughout the ages, which distinguished the urbanization over different ages, so man managed to reflect physical images in his physical reality and record it in writing as an attempt to document his legacy, culture, and habits overages.

Art of Writing is one of the most important forms of main communication that passed through several stages to develop it starting from pictographic writing that is rooted in Egyptian Hieroglyphs. It is historically used as documentation through pictures in the civilization of the ancient world, but these pictures were rapidly developed into letters as man discovered syllables that composed words, which evolved later to separate sound units called letters, here Typography started. According to human life development, the overlap of different communities and the human desire for documentation and communication, there is a need for understanding and communication mean with counterpart communities, which developed is thought to discover writing that managed him to communicate, and to document his production, culture, and legacy from extinction. Development phases of Writing are continued as it began on the



Figure (15) Roman

shape of pictures and paintings group for daily life information signs, some of the inscriptions aged 11333 years old found in Cave Lascaux in France and Cave Altamira in Spain.

It has reported that formal writing has set by Sumerian in 3500 B.C and by the year 1600 B.C Phoenician has developed sound symbols that used to present spoken words and the credit of creating early alphabet is attributed to Phoenician. Besides the "Alphabet" word is a combination of the first two Greek letters "Alpha and Beta", Roman used that Greek Alphabet on the same basis and on a style that depends on Alphabet Uppercase that is still using till today. They created art for different forms of letters. Also of the Art of Handwriting, they also invented some alphabet scripts - formal and informal that suit all kinds of writings as they created it consequently. The middle ages were full of scripts written by hand and pictured carefully. This led to the development of a wide group of writing methods, the invention of movable metal letters and the print machine on Fifteen Century by Johannes Gutenberg (1398 - 1468) was a turning point for the modern world and of course for Typography in his new case. (Berkeley 1937)

• **Origin & Development of Typography:**

After the birth of Johannes Gutenberg and his invention of mechanic print, he designed the first family of fonts called "Blackletter" but it described as difficult to read to some extent.



Figure (13) Blackletter

By the end of Fifteen Century Nicolas Jenson designed Roman font, which was marked by clarity and ease to read due to its straight and curved lines. Aldus Manutius invented Italic font inspired by Roman Font on 1501, which distinguished by its allowance for more words on the page (Baraa Ali 2018).



Figure (14) Italic

Typography lasted for Eighteen Century in 1734, as William Caslon invented Serifs Font called Old Style, then John Baskerville amended the old style by adding appendages and discrepancy on thickness and softness (Baraa Ali 2018). Then, Vincent Figgins designed Slab Serif Font

that used in headlines and newspapers in turn. In 1816, William Caslon IV removed appendages from "Sans Serif" Font, which considered a great leap aroused outcry on Typography. In 1957, Max Miedinger designed Helvetica Font that included several languages among Arabic (Baraa Ali 2018).

<p>A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z 1 2 3 4 5 6 7 8 9 0</p>	<p>Serif</p>	<p>Sans Serif</p>	<p>A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c d e f g h i j k l m n o p q r s t u v w x y z 1 2 3 4 5 6 7 8 9 0</p>
<p>Figure (16) Helvetica</p>	<p>Figure (17) Sans Serifs</p>		<p>Figure (18) Slab serif</p>

=According to the development of age, advertisement maker used typography in a way against standards, invented new designing methods and benefitted from the huge development in modern graphic to develop typography to become as a separate art to provide full paintings based on typography, which reached the extent of optical glamour of aesthetics formation that resulted from its several and different formations.

• **Formation Methods of Typography:**

Typography was not confined to limits of reading phrases and words but rather it deviated from standard limited patterns of letters a little more, so artists and advertisement maker dealt with Arabic Letters in innovative and creative ways to invent optical aesthetic units through different formation

methods as following:

- 1- **Repetition:** Using similar letters and words and repeats them in a fixed pattern to create a particular decorative aesthetic rhythm.

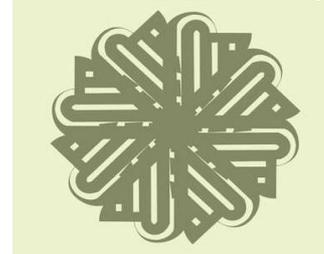


Figure (19)

- 2- **Opposition:** Through adverse repetition (opposite) for letter or word to achieve intended balance.

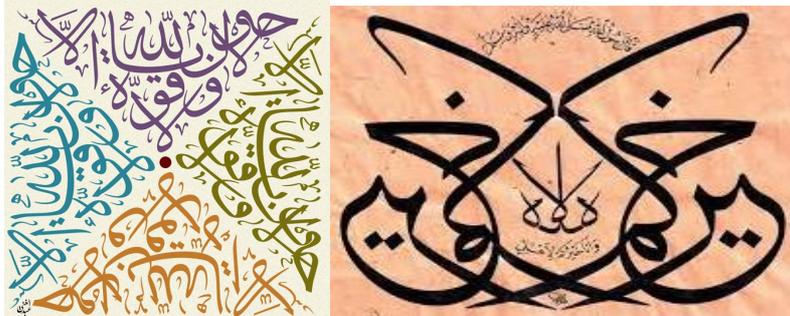


Figure (20)

- 3- **Overlying:** It includes the overlying of words or letters and creating layers of letters

composing a grid of overlying lines.



Figure (21)

- 4- **Create a Particular Structure:** The artist sets a frame that may be geometric, architectural,

botanical, animal, or other things, then design literal lining formations inside these



structures or formatting letters to be that structures.



Figure (22)

- 5- Overlaying Different Types of Fonts: Here artists may use different families of fonts for the formation and aesthetic diversity for letter thickness and softness.
- 6- The exchange between Font and Backdrop: It includes space exchange between word or letter and its backdrop that shape aesthetic formatting spaces.



Figure (23)

- 7- Division: focus on one of the letters as a center of the aesthetic formation and it may be created through-thickness or glow, or through considering it optical center in linear design and the stretch of other words or letter.



Figure (24)

- 8- Letter Thickness or Size Graduation: Designer deals with letters gradually according to his desire such as letter bigger thickness to less thickness.



Figure (25)

- **Problems and Difficulties that Arabic**

Typography Faces:

- **Examination:** To show letters in all forms concerning its geometric forms.
- **Transformation:** Includes the beginning of Fa', Qaf', and Waw letters, in the beginning, middle, or end of the syllable.
- **Outlining:** Includes the outline of Haa', Khaa' and Gi'm letters and clear the white in the middle of them.
- **Piercing:** Taking into consideration the holes in letters surface such as Haa' Letter.
- **Circulation:** Taking into consideration letters bows such as Si'n, Shi'n, Sa'd, and similar letters.
- **Coordination:** It means to organize separated and disconnected letters on one coordination.
- **Justifying:** The line should be straight from beginning to end.
- **Proofing:** Taking into consideration writing letters' tails such as Haa' and Waw.
- **Separation:** It means disconnection among letters (Omran Mohamed 2016).

- **Attitude in Employing Modern Typography:**

(Baraa Ali Hussien 2018) submitted a new classification for Typography modern attitude depending on psychological affect for each of them as following:

- **Dramatic Typography:** It represents the use of Typography in a way that affects the recipient emotionally (such as employing typography in comedian way for purposes of pleasure and entertainment, or in tragedy way to depict a tragedy or humanitarian event.
- **Kinetic typography:** It means motion graphics that used to move writings according to particular coordination meant by the designer according to the sequence of required readings for each design, which enhances the way of displaying optical information.
- **Three-dimensional typography:** Using Three-dimensional programs to grant a sensation of reality, the possibility of adding touching and inflating shadow and light such as letter

formation. **concluded that typography divided into Two types as following:**

- **Functional Typography:** All different types of Arabic fonts are employing to represent an idea.
- **Aesthetic Typography:** Considers formation, expressive and aesthetic values of Arabic Letters and does not concern with the reading ability and the possibility of employing it at all.
 - **Origin of Art and Industry of Textile:**

Egypt was famous for the textile industry, especially Linen, Arab attributed linen textile to Egypt Copts so they called it Coptic textile. Copts excelled in decorating textiles by overlaying decorations of humans, animals, geometric and plant forms. In early Islamic age, textile was made according to the methods followed by Copts and Sasanian plus Arabic writings in Kufic Font, then it developed in Fatimid age and reached a high degree of accuracy and used silk, wool and very thin linen that may be like silk in appearance. Fathy Gouda used his approach by a new method to deal with Arabic Font in designing textile and he formulated Arabic font in an innovating way far from old font formulations during using fonts and owns a lot of various technical processors that created by power. (Amira Saad 2012).

It is useless to try drawing a true image for this industry in prehistoric ages, as we lack historic resources and physical influences that outline methods or ways used in spinning yarn and weaving fabrics at that time. We also lack resources of spinning the yarn found by Mr. Junker "Merimde Cemeteries" in Bani Salamah that located on the edge of West Delta, as well as our lack of Fabrics weaving means that found by Faiyum, which attributed to New Stone Age "Neolithic". However, finding these yarns and fabrics indicates the prospects of this industry and that it began to appear at the end of this age, then it developed till reached a significant degree in the Pharaoh's Age. The spinning and Weaving industry is considered one of the first industries that human-made at the end of Old Stone Age, in Egypt Pharaoh Age, ancient Egyptian made fabrics and clothes from linen, used plant dye to color it and used Alum to stabilize these colors.

It is a matter of record that ancient Egyptian used coarse plants in making textile and their daily needs, most importantly, linen, palm fiber, and Jute Tenacissima that used in making ropes since earliest ages, while animals fiber was not so important in fabrics industry due to the invalidity of sheep wool for weaving process that existed in that time and due to their belief that this wool is not clean. The model of Meketre's Group depicts a

textile workshop shows a group of women prepare spinners for spinning then weaving via looms, some women appear sitting and weaving on their looms, while other women are standing and spinning by spinners. Egyptians provided significant input in linen industry and reached a great degree of magnificence and perfection that difficult to be reached at the current time despite the great development that made by machine evolution, as some of the ancient Egyptian textiles that mummies wrapped in it reached the accuracy that makes it stimulate the most accurate types, especially the one found in Thutmose III Tomb that exists in Egyptian Museum. Most of the Textiles in Coptic age made of linen and wool textile and some of them from cotton. It weaved in Coptic way and most of it Egyptians made. This group of textiles has great archaeological value as it was made over various ages. In Coptic age, textile factories spread in all parts of the country, Lower Egypt and its different cities were known by linen textile as the atmosphere was suitable at that time. There are a large of ribbons in The Coptic Museum decorated by an additional weft, as well as the reputation of Coptic age textile than known by Coptic textile achieved the expectation that indicated in historic resources (Ansaf & Kawser 2005).

Egypt textile had a great reputation all over the world. It was an appreciation point and exemplary in its accuracy, magnificence, and elegance. Arabs knew this, so they sought to benefit from this technical legacy and encourage it till the textile industry flourished all over Islamic Countries in general and in Egypt in particular as after conquests Arab abandoned their ragged Bedouin clothes such as wool smock that patched by leather. Or long clogs that tied in the middle by sashes and cactus that they put on the clogs, and they were elegant in clothing as they affected by urban life of open countries, the textile industry flourished in Islamic Countries and became the most important industry and it was the Kiswah of Kaaba before and after Islam.

As the textile industry started hundreds of years ago, experience and attempts led to choose the most suitable filaments for that industry in the world. Cotton, wool, linen, and natural silk are among the most important fibers for the fabrics industry, during the past sixty years, science has begun to play a significant role in Fabrics industry as a result of many chemical studies in that field and the discovery of a group of fibers that contributed artificial silk industry, Decron, Nylon, and many other synthetic fibers. Due to this great and remarkable progress in the textile industry,

which attributed to that age that we describe as the age of developed technology in all fields and using computers in various industries, fabrics have diversified and varied in its different materials and characteristics and filled the markets with its magnificent and attractive colors with its innovative designs that express the spirit of this age. The textile industry has witnessed great progress in our time as it is characterized by patterns, textures, and the most gradual colors (Rehab 2015).

- **Textile Raw Materials:**

Textile filaments that used in spinning and weaving industry are divided into two main sections:

1- Natural Filaments: It provides our nature in the form of ready filaments in three types:

- Animal (Protein): The best known; wool, silk then hair such as the camel hair (lint) and rabbits and goats hair (Cashmere and Mohair)
- The plant (Cellulose): The best known; cotton, linen then jute, ramie, hemp and Sisal
- Metal: The best known is Asbestos

2- Industrial Filaments: Human-made it for himself from materials that were not filaments; it can be divided into five types:

- Filaments from protein origin: Orlon and likra abstracted from the corn and Caselyn
- Filaments from Cellulose origin: Such as different types of rayon and acetate
- Filaments from Metal origin: Includes glass filaments
- Filaments from Chemical origin: It is called real industrial as its industry conducts in laboratories completely and does not contain any natural source, including all kinds of nylon, polyester, and acrylic groups
- Filaments from Rubber origin: Includes Acetic abstracted from rubber trees.
- Natural fibers are generally characterized by certain properties, as it breaks apart biologically and gives a greater feeling of comfort, or it can be abstracted from Biological renewable sources, while synthetic fibers are distinguished by its strength, durability, cheap, and greater possibility to modify its properties. Chemical composition and structure of the synthetic fiber are completely different, and synthetic fiber can be engineered to simulate the natural fiber to raise the quality of the final product. Of course, the properties of the fiber play a significant role in defining the properties of yarns, fabrics, and finished products (Mohammad Gamal 2006).

- **Fabric Structures:**

- **Constructive Structure:** It is everything about textile construction including raw material, textile structure, and design.
- **Textile Structure:** It is the constructive unit of textile and is defined as the way of engagement between two groups of yarns, one of them is longitude and called warp yarns and the other latitude filaments and called the weft yarns. Due to different methods of warp and weft engagement, it produces the various textile structures, which differ in surface appearance from each other, including the so-called simple structures that upon it complex textile structures are built **such as following:**
- **Plain Textile:** Plain Textile is one of the simplest types of textile emphasizes the simplest types of two sets of interlocking threads, in which yarns are weaved in a mutual arrangement i.e. Yarn of first weft cross under yarn of first warp and above the second warp while yarn of the second weft opposite the first track.
- **Twill Textile:** It differs in appearance from the solid textile as a result of the way of construction and yarn engagement with each other as it gives a unique surface of fabrics appears in the form of diametric oblique yarns, in which warp yarns are engaged with weft yarn in a 45-degree angle in normal twills, less or greater in extended twills.
- **Satin Textile:** Satin textile is distinguished by the shiny surface on fabrics face; an example of satin fabrics is all kinds of satin fabrics (Ali El Sayed Zalat 2005).
- **Textile Industry Technology:**

The traditional handmade textile industry is an important part of the material culture of human societies and still, a rich cultural and heritage legacy cherished by everyone till today, and has been proven that it exists since ancient ages and is still processed till today in many Arab and foreign countries, for example, Kuwait, Bahrain, Saudi Arabia and Sultanate of Oman, and in Sudan and Egypt very few. By the beginning of the nineteenth century, the biggest revolution occurred in the textile industry as the machine enters instead of labor, these developments beside major leap in technologies and communications, the transfer of cultures and large economic openness had negative effects on traditional handicrafts made it exposed to extinction and latencies. Due to the importance of continuing this artistic and cultural legacy that deep in peoples' mind to continue its career for future generations, it had to be developed and modernized to improve its

position to comply with the current reality in all cultural and scientific facts and human traditional handmade textile needs of today and tomorrow, the evolution of technology contained three pillars; 1) development in looms, 2) development in design and colors, 3) marketing; in looms, ground loom developed, which was mounted on the ground with moving wooden loom, as well as the old vertical loom was developed in a modern way, each loom was tried by practical operators for twenty artesian labors in traditional handmade textile and these operators proved a remarkable success. The revolution in design has been developed in a way that can compete and keep pace with the requirements of the current age and new multi-color elements have entered through the use of chemical dyes beside local dyes. In the marketing process of textile extracts that were used in the past for purposes related to the lives of Bedouins and their needs, it set developed innovative ideas to take advantage of it, and it was implemented and offered for marketing through tourist and commercial centers and found acceptable popular culturally, socially and economically (Ezz El-Din Abdel Rahman, 2008).

- **Typographic Aesthetics in textiles:**

The Arabic calligraphy has evolved and developed under Holy Quran without other fonts because it wrote the collected and copied in Arabic and religious phrases and prayers remained to be written in Arabic without the other fonts, which impacted Arabic calligraphy with religious spirit from the beginning and this spirit remained increasing and even artistic form increased mixing with religion and Arabic calligraphy associated with Islamic art and decorative elements, and this plant and geometric decoration emerged in manuscripts, ceramics, carpets, and textiles.

The Mamluk age is considered the golden age to improve the Arabic calligraphy and especially Thuluth as Mamluks interested in that calligraphy and created schools for it.

During the Mamluk age, textiles industry and decoration flourished as a result of the habits of the sultans, and they made various amendments and improvements to their clothes and clothes of their state men and soldiers. Clothes have varied due to different situations and events, so printed linen fabrics and silk fabrics, printed cotton fabrics and decorative fabrics spread across the state, and the most important examples of fabrics that decorated by Arabic calligraphy in Mamluk age are silk brocade fabrics, Damascus fabrics and textile lining by the weft and printed and embroidered textiles. Everything that came later on textiles at the world was attributed to the

Mamluk age (Fadia Hashem Zakarya 2017).

Therefore, this study represents the formulation of textile design using modern typography in a new philosophical and intellectual framework, which allows us formulations of formative, expressive and aesthetic values characterized by uniqueness, novelty, and modernity in designing textile works and contribute in the promotion of aesthetic sense, as it provides different methods for the designing formation of typographic elements and technically employing it by linking it with "augmented reality" technology to take advantage of its properties to add a modern computer reference in the art of weaving. Therefore, the interaction of the typography elements in exchanging relationships to produce an innovative and influential textile form to achieve the effectiveness goal in the user's hearts and technologically linking it to augmented reality technology achieves the attraction and thrill (Shimaa Salah Sadek 2016, Nashwa Mustafa 2019).

- **Functional Performance Features:**

Are the features of strength, durability, and health properties of clothing, aesthetic appeal, comfort, safety, and ease of use properties and properties of phenotypic? (Ahmed Salman 2018). They meet the functional needs and fit surrounding conditions of use, which measured by multiple tests and the product quality and suitability of the final use determined upon it (Mohammed El Jamal et, al. 2010).

Functional performance features of woven fabrics to suit clothing use:

- 1- Performance features that affect the consumption longevity of fabrics, and determine the endurance ability of woven and affected by factors such as the strength tensile, Elongation, and resistance Abrasion.
- 2- Features of achieving thermal comfort and affected by factors such as the amount of insulation, Thermal properties, Air permeability, and Absorption Water.
- 3- Several features affect the aesthetic appearance of clothing fabrics, including fabrics Drapability, Pilling resistance, Color and Texture, and Thickness. Features of fabrics easy care that affected by the rate of soiling fabrics and the probability of frequent washing and ironing (Amira Farghali 2015, Mona Ahmed 2009).

Second: (the influence of structural factors on some of the functional performance features of women's summer exterior clothing:

Air permeability: The permeability of textile is affected by several structural factors, such as the density of each of the warp and weft yarns in unit

area, and the more yarns are crowded in density and woven tightly, we get air voids in the fabric that are few between the yarns, therefore, fabrics are less permeable for air, yarns count and the amount of twisting it, so that increasing the coverage coefficient value of the warp, weft, or increasing one of them resulted in lower air permeability rate with the stability of all specifications and other textiles (Saadia Khalil 2002).

- 1- the importance of air permeability increases in the case of summer fabrics made from synthetic fibers that do not absorb sweat.
- 2- Tensile strength: Tensile strength is one of the important features that must be available in all textiles whatever its ultimate use and tensile strength are affected by the raw material type, method of woven, yarn tensile strength, and increasing the density of yarn with woven increases the tensile strength (Amira Farghali 2015).
- 3- : Elongation: Fabrics elongation Should not be less than 15%, and fabrics that are less than 15% are deemed from solid fabrics while exceeding fabrics are from required extendable fabrics. Clothes need elongation between 15% to 25% until the required comfort of movement is achieved (Faten Abdel Tawab 2008) Fabrics elongation Increases by the textile increasing density till a certain point after that the increase does not accompany by the increase in elongation density, to restrict the freedom of yarns to slip to create elongation (Amira Farghali 2015).
- 4- Weight: The weight of fabrics contributes to the clothing concerning reducing the burden or weight on the body and maintain the consistency of the body shape. Amira Farghali 2015) the density of used yarn affects the fabric appearance, texture, weight, and mechanical features, so it is necessary to choose the density of yarns suitable for use according to the different fabrics such as; exterior fabrics in winter season should be heavy, resistant to consumption and suit thermal insulation, so it made of med-TEX yarns or high TEX yarns, in summer, clothes require the absorption of moisture, lightweight, and made of low TEX filament (Hearle et.,al 2005).
- 5- Thickness: Fabrics thickness plays with weight in acquisition final product features of comfort, and we note that reducing fabrics thickness along with a reduction in weight is more important than air permeability feature, to reduce the body temperature in hot

weather, and the high values of the cloth weight along with increasing thickness give sense low comfort. There is a positive relationship between the diameter of the used warp and weft yarns and the thickness of the cloth (Saadia Khalil 2002).

- 6- Susceptibility of lint is one of the affecting factors on clothing appearance as it reduces the quality of the product. Lint is a small contract or Core of the filaments on the surface of the cloth, and lint depends on three factors; the composition rate of fluff on the surface of the fabrics, the complexity and engagement rate of fluff, and the rate of removing lint (Faten Abdel Tawab 2008). The fabrics resistance to lint is differing according to raw material type, method of spinning, and the amount of yarns twist, as well as the textile structure, and the used yarns count; they are responsible factors for the features of hardness or softness of cloth surface, thickness and texture, whether it is by increasing tortuosity and roughness of the surface or soft of touch (Yan Shen 2010).

8- Study:

In this study, we tested the research hypothesis by using the application of augmented reality in smartphones by scanning one of nine advertisements designed and displayed previously for a group of textile fabrics for women fashion, which displayed on the 3D model prepared by the researchers to experiment. The design that has been scanned in the advertisement is directly displayed in a 3D model that allows the user to see it from all directions and roll, rotation, rounded, remove it and interact with it in p form, it also allows to order purchasing the product electronically, as well as the availability of choosing several other designs, and we expected that the typographic textile fabrics design contributes in providing the user the positive marketing attitude towards augmented application (H).

9- Method

• Design, participants, and procedure

An experiment was conducted to test the hypothesis through the adoption of trying augmented reality application to check the contribution of typographic textile fabrics design in granting the user the positive marketing attitude for augmented application.

Special application for this experiment "BE TRENDY" was designed and uploaded on the Play

Store to allow any user to download and use it and to enjoy the experience in an easy and freeway. The ease of use was taking into account so once you run the application and direct phone camera towards the augmented advertisement the 3D default form automatically appears on advertisement space in the real physical world of the user and allows him to interact with the model as he wants. The application is provided by complete interaction choices for each textile design alone, as well as the availability of transfer between textile designing models previously displayed in an easy interactive way, and allowing the possibility of purchase through the application, and save the images and the possibility of Simulating the user image of the model. Then the participants fill the scale of the attitude (Appendix).

The sample consisted of 152 respondents, 27 responses were excluded from the sample because of the incomplete answers, so the sample became consisting of 125 respondents, aged between 16 and 57 years old, from a random sample of women.

10- Stimuli

Nine augmented advertisements designs were designed to make sure that advertising options were suitable for search, as a prior test, of 5 specialists in advertisement have been asked to watch the advertisements and after five minutes they were tested to guess the nature of the advertising message, and the advertisements were run in both Arabic and English. The presentation was prepared according to the following steps:

- **The First Phase:** Included designing several typographic designs as following:
- **Second & Third Phases:** The first textile design was viewed, then the textile fabric that designed by researchers was applied and composed on the 3D model, and then the textile description:
- **The Fourth Phase:** Included designing interactive and electronic augmented advertisements.
- **The Fifth Phase:** It included designing and displaying the augmented realty application "BE TRENDY" that allows for an augmented user experience, and the web site design linked to the application, which allows the reservation and purchase of products seamlessly.

- **The First Phase: In which several typographic designs were designed as the following:**

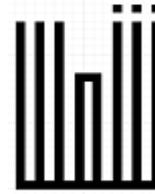


Figure (27) Typographic Design of word "Shams" geometric



Figure (28) Typographic Design of word "Aya"



Figure (29) Typographic Design of word "Mawada"

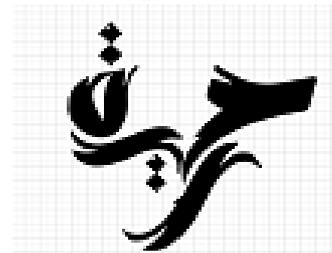


Figure (30) Typographic Design of word "Houria"



Figure (31) Typographic Design of overplaying of several Arabic Letters



Figure (32) Design of Arabic Font for a group of Arabic letters



Figure (33) Typographic Design of overlaying and crossing of several Arabic Letters

- **Second & Third Phases: The first textile design was viewed, then the textile fabric that designed by researchers was applied and composed on the 3D model, and then the textile description:**

- **The First Design:**



Figure (34) The Typographic design model as an essential component of textile design



Figure (35) Textile design composed of the previous typographic design.

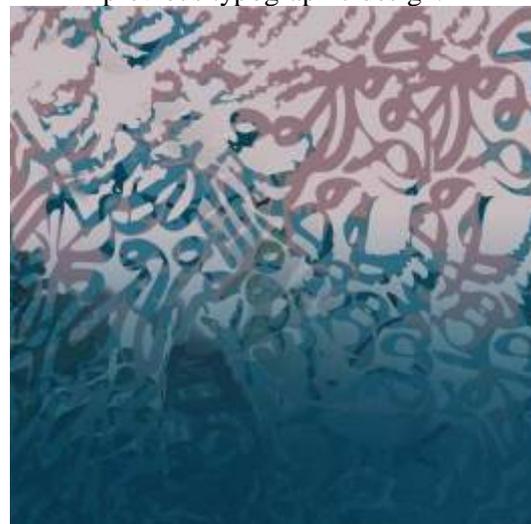


Figure (36) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (37) Simulating the design on a 3D model for a woman and displaying it from all sides



Figure (38) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern - ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/120 Denier 3- CM Threads number: 36 Threads / CM

Weft: 2- Material: Polyester / Lycra 2- Count: 2/50 English 3- CM weft number: 25 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

- **The Second Design:**



Figure (39) The Typographic design model as an essential component of textile design



Figure (40) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (41) Textile design composed of the previous typographic design.



Figure (44) Simulating the design on a 3D model for a woman and displaying it from all sides.



Figure (45) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern - ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/70 Denier 3- CM Threads number: 40 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/40 English 3- CM weft number: 40 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

- **The third design**



Figure (46) The Typographic design model as an essential component of textile design



Figure (47) Textile design composed of the previous typographic design.



Figure (48) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (49) Simulating the design on a 3D model for a woman and displaying it from all sides



Figure (50) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern
- ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/150
 Denier 3- CM Threads number: 44 Threads / CM

Weft: 1- Material: Polyester 2- Count: 1/50
 English 3- CM weft number: 35 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50
 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30
 English 3- CM weft number: 23 Weft / CM

- **The fourth design:**



Figure (51) The Typographic design model as an essential component of textile design



Figure (52) Textile design composed of the previous typographic design.



Figure (53) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (54) Simulating the design on a 3D model for a woman and displaying it from all sides.



Figure (55) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern -

ground: satin 8 - engraving: twill 3/5 Warp: 1

1- Material: Polyester 2- Count: 1/70 Denier

3- CM Threads number: 40 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/40

English 3- CM weft number: 40 Weft / CM

- Scarf:

Warp: 2- Material: Cotton 2- Count: 1/50

English 3- CM Threads number: 30 Threads /

CM

Weft: 1- Material: Cotton 2- Count: 1/30

English 3- CM weft number: 23 Weft / CM

- **The fifth design**



Figure (56) The Typographic design model as an essential component of textile design



Figure (57) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (58) Textile design composed of the previous typographic design.



Figure (59) Simulating the design on a 3D model for a woman and displaying it from all sides.



Figure (60) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern
- ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/120 Denier 3- CM Threads number: 36 Threads / CM

Weft: 2- Material: Polyester / Lycra 2- Count: 2/50 English 3- CM weft number: 25 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

- **The sixth design**

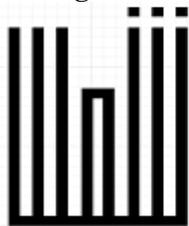


Figure (61) Simulating the previous design in the shape of "Scarf" for Women



Figure (62) Simulating the design on a 3D model for a woman and displaying it from the front and behind

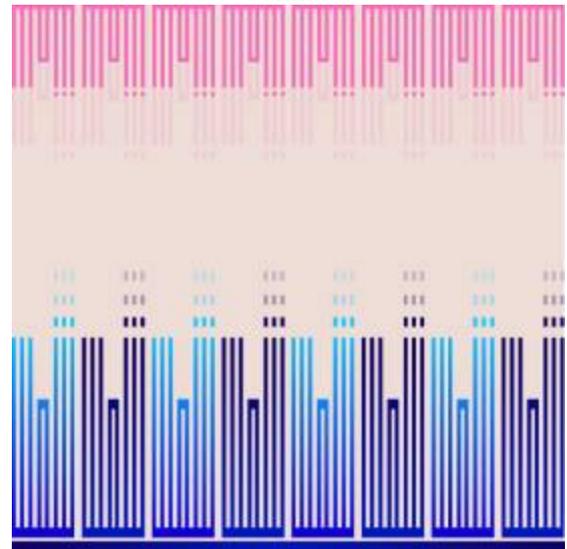


Figure (63) Textile design composed of the previous typographic design.



Figure (64) Simulating the design on a 3D model for a woman and displaying it from all sides



Figure (65) Simulating the previous design in the shape of "Scarf" for Women

- **Textile Description of Previous Design**
- **Dress**

Textile Structure; normal pattern - ground: satin 8
- engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count:
1/150 Denier 3- CM Threads number: 44
Threads / CM

Weft: 1- Material: Polyester 2- Count: 1/50
English 3- CM weft number: 35 Weft / CM

- **Scarf: Textile Structure:**

Warp: 2- Material: Cotton 2- Count: 1/50
English 3- CM Threads number: 30 Threads /
CM

Weft: 1- Material: Cotton 2- Count: 1/30
English 3- CM weft number: 23 Weft / CM

- **The seventh design**



Figure (66) The Typographic design model as an

essential component of textile design



Figure (67) Simulating the design on a 3D model for a woman and displaying it from the front and behind

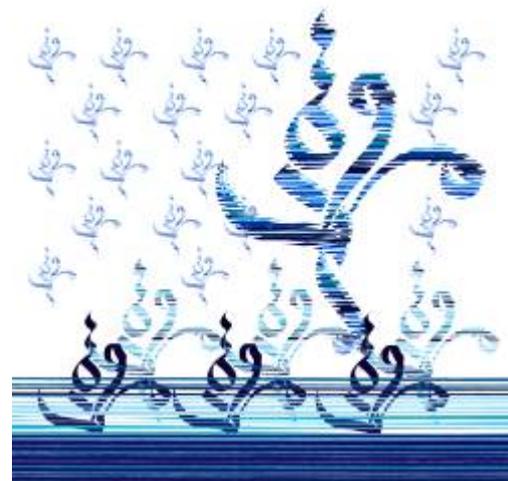


Figure (68) Textile design composed of the previous typographic design.



Figure (69) Simulating the design on a 3D model for a woman and displaying it from all sides.



Figure (70) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern - ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/70 Denier 3- CM Threads number: 40 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/40 English 3- CM weft number: 30 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

The eighth design



Figure (71) The Typographic design model as an

essential component of textile design



Figure (72) Simulating the design on a 3D model for a woman and displaying it from the front and behind

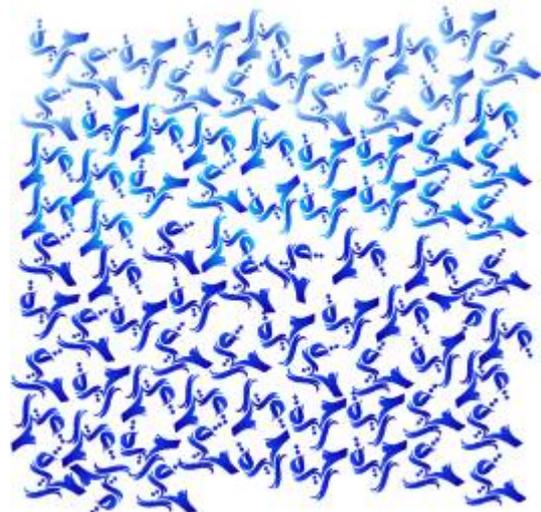


Figure (73) Textile design composed of the previous typographic design.



Figure (74) Simulating the design on a 3D model for a woman and displaying it from all sides



Figure (75) Simulating the previous design in the shape of "Scarf" for Women

• **Textile Description of Previous Design**

- **Dress Textile Structure:** normal pattern - ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/120 Denier 3- CM Threads number: 36 Threads / CM

Weft: 2- Material: Polyester / Lycra 2- Count: 2/50 English 3- CM weft number: 25 Weft / CM

- **Scarf:**

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

- **The ninth design**

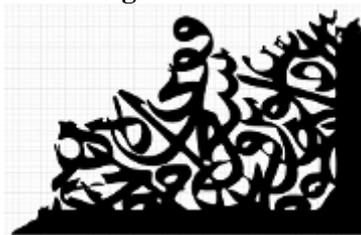


Figure (76) The Typographic design model as an essential component of textile design



Figure (77) Simulating the design on a 3D model for a woman and displaying it from the front and behind



Figure (78) Textile design composed of the previous typographic design



Figure (79) Simulating the design on a 3D model for a woman and displaying it from all sides.



Figure (80) Simulating the previous design in the shape of "Scarf" for Women

Textile Description of Previous Design

Dress

Textile Structure; normal pattern - ground: satin 8 - engraving: twill 3/5

Warp: 1- Material: Polyester 2- Count: 1/150 Denier 3- CM Threads number: 44 Threads / CM

Weft: 1- Material: Polyester 2- Count: 1/50 English 3- CM weft number: 35 Weft / CM

Scarf:

Warp: 2- Material: Cotton 2- Count: 1/50 English 3- CM Threads number: 30 Threads / CM

Weft: 1- Material: Cotton 2- Count: 1/30 English 3- CM weft number: 23 Weft / CM

• **The Fourth Phase:**

Designing augmented electronic interactive advertisements that linked with augmented application to market textile products, as users will download the application mentioned in the advertisement, open the phone camera and scan the advertisement to transfer to the electronic application automatically, then he will start the augmented experience.

The Fifth Phase:

It included designing and displaying the augmented reality application "BE TRENDY" that allows for an augmented user experience, and the web site design linked to the application, which allows the reservation and purchase of products seamlessly.



Figure (81) First Model of augmented interactive advertising design of first textile design

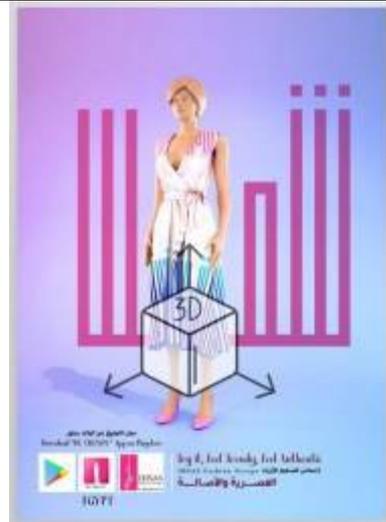


Figure (82) Second Model of augmented interactive advertising design of first design



Figure (83) Third Model of augmented interactive advertising design of first textile design



Figure (84) Fourth Model of augmented interactive advertising design of first design



Figure (85) Fifth Model of augmented interactive advertising design of first textile design



Figure (86) Sixth Model of augmented interactive advertising design of first textile design



Figure (87) Seventh Model of augmented interactive advertising design of first textile design



Figure (88) Eight Model of augmented interactive advertising design of first textile design

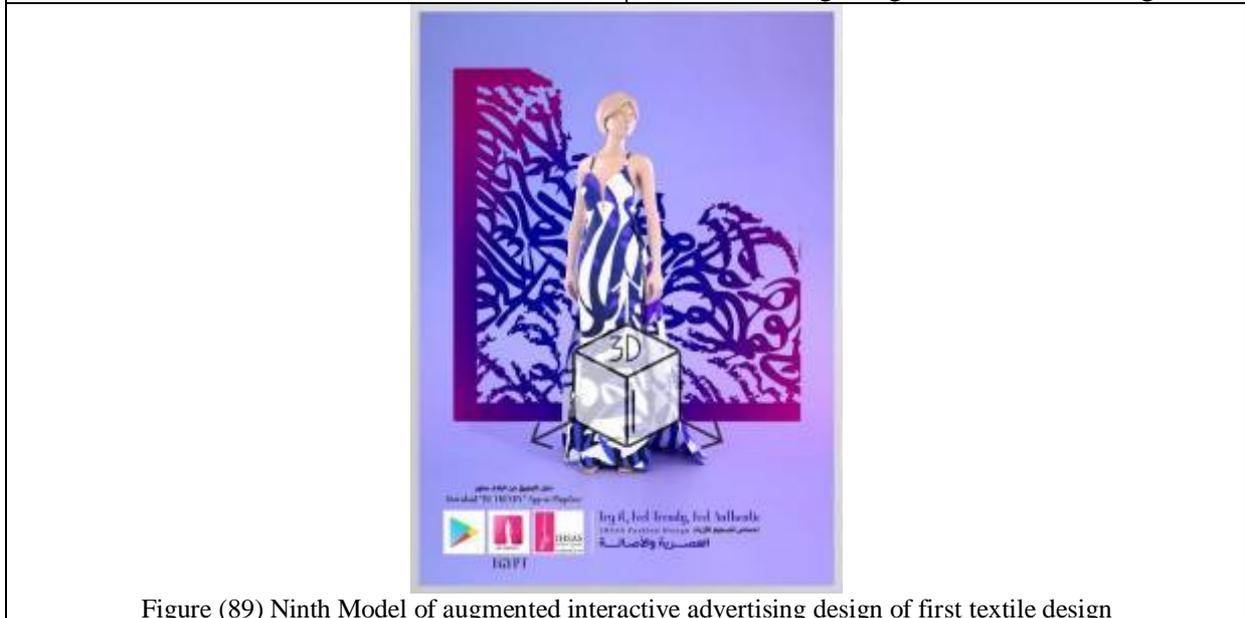


Figure (89) Ninth Model of augmented interactive advertising design of first textile design

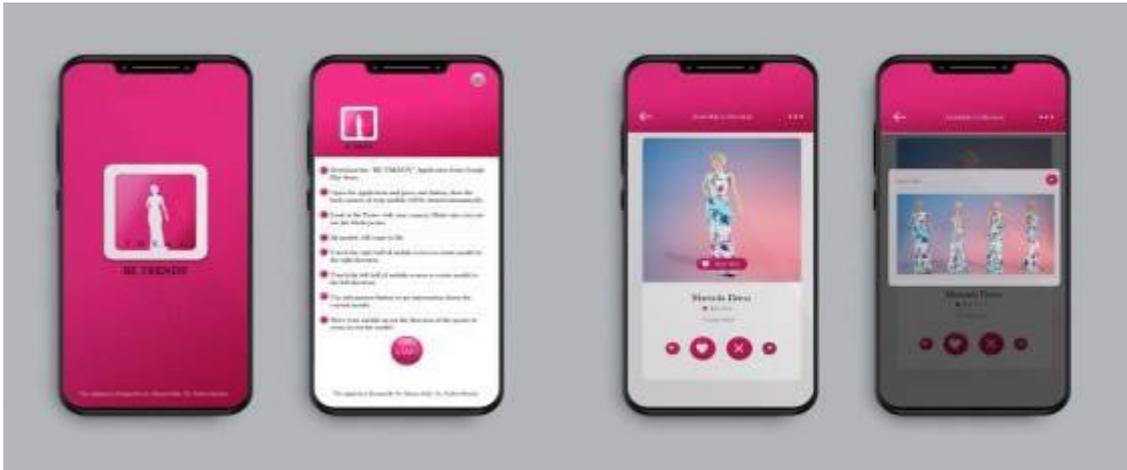


Figure (90) “Be Trendy” Augmented application on Palystore

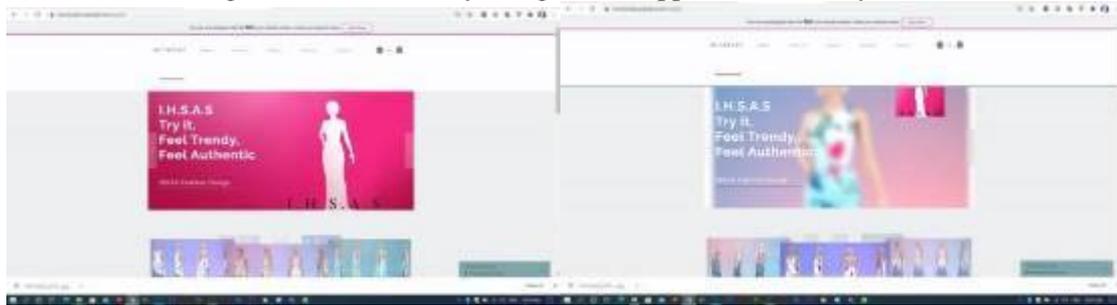


Figure (91) “Be Trendy” Websites Design

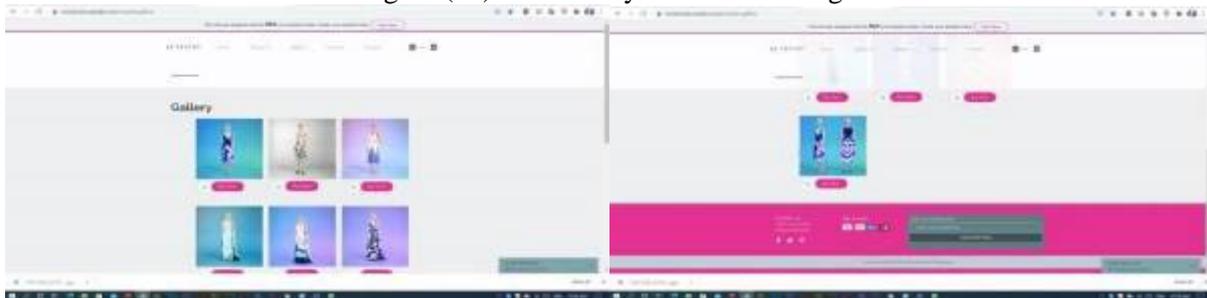


Figure (92) “Be Trendy” Websites Design

11- Measures:

- **Attitude - its nature, importance, and measurement methods:**

Studying attitude has a particular importance, especially in effect process for design, as an individual's attitude towards design and affect his response. One of the reasons that incite designers to concern with users' emotional aspects that help them to direct their attitude towards the offered product or service. Many methods proved its effectiveness to change or amend attitude. As the persuasion for a user who acts particular conduct may change his attitude. Here, advertising means, especially electronic and augmented means play a significant role in changing attitude (Foad & Sayed 1985).

The nature of Attitude refers to disputes that qualify a person to respond in particular behavior patterns towards particular designs or thoughts. It composes a complex system in which a large group of various variables is interacting, and the

attitude involves three basic components as following:

- **Emotional Component:** Refers to a general sentiment method, which affects the response to accept the attitude or reject it.
- **Knowledge Component:** Indicates the knowledge aspects, which involve a person's point of view that relates to his decision towards attitude.
- **Behavioral Component:** Refers to a behavior attitude under particular patterns in particular situations. It should be noted that these components of attitude vary from person to another in terms of its independence and strong degree. (Abdel Mageed 1986)

- **Methods of Attitude Measurement:** user's attitude towards design are determined by his feelings and visions about this design, and attitude scale measure a person's acceptability or rejections and his endorsement or opposition for this design.

Many attempts have conducted to set and design attitude scale. In 1929, Thurston submitted an attempt to develop a method to measure attitude based on the core ideas of Psychophysics in terms of the possibility of creating symmetry between the psychological phenomenon intensity (attitude) and physical measurement units (Degree for Test). Its style is based on terms of external arbitrators who arrange the stimulants (sentences indicate the attitude towards a particular matter) in straight units in terms of the extent to which it expresses the intensity of a attitude towards a particular matter. Thurston method is based on submitting pre-determined items to examined person by arbitrators and procedures of calculating it percentile, While Likert method is based on a simple reverse method completely, as it submits completely neutral items and the examined person expresses his attitude on a continuous graded number of points. (Safwat Farag 1980)

Likert dispensed the arbitrators in his method to measure the attitude, which Thurston method required it. In this method, attitude scale includes an equal group of preferred phrases (Positive and Negative) in which user is required to indicate the extent of his agree or disagree through some alternatives (3 or 5 alternatives), as three alternatives were available which are (strongly agree - Not sure - disagree) and estimated measures are set from (1) to (3) for those alternatives so (Strongly Agree takes 3) (not sure takes 2) (disagree takes 1) for positive phrases, while in negative phrases this arrangement is reversed (Reference 18). The main advantage of the Likert method is that it excludes the arbitrators' method used in the Thurston method to evaluate various items, Therefore, the attitude scale for users in this research is composed according to the Likert trilateral method. (K.M Evater 2010)

- **The scale of pre and post attitude is adopted according to the Likert Scale, because of theoretical analysis, previous studies, and researches that related to measuring attitude; the researchers followed the following steps:**

- **Defining the purpose of the scale:** The attitude scale in this research aimed to measure users' attitude towards marketing textile fabrics through the augmented application.

- **Defining the pillars of attitude scale:** After reviewing previous studies, the main pillars of attitude scale were defined under general and procedural objectives predetermined for the scale, therefore, the pillars of the scale were defined.

- **Defining the items of attitude scale:** By reviewing previous studies to prepare attitude scales, the main pillars of the scale were defined along with negative and positive expressions that achieve the objective, therefore, the scale phrases were formulated.

- **Measuring response intensity:** Three possibilities for response were drafted with each of scale phrases that included (I strongly agree, I am not sure, I don't agree), as it gives three degrees for the first response, two for the second response, and one for the third response.

- **Amend attitude scale:** To define the apparent honesty of the scale content, to do that the scale was submitted to a group of experts in the field of (advertising - weaving - methods, and approaches of teaching) and the most important observations made by the specialists were amended, then the stability of the scale was determined using the equation Alpha Coefficient, which must not be less than (0.8) as a condition of the stability of the scale, the stability Coefficient of the scale was found (0.91) which is a high degree of stability.

- 1- **Calculating the answer time of the scale:** The average response time of the scale was calculated and reached 12 minutes, this was done by calculating the average time spent in the application.

12- Result

the following statistical methods were used to process it:

- Computational averages standard deviations.
- T-Test

Computational average of sample individuals degree in pre and post-application were calculated. The standard deviation was also calculated. T-Test equation was used to address results (8: 467) The following table indicates these results:

Table (1) Computational averages, pre and post standard deviations and T value that calculated for sample individuals degrees

Pre		Post		Difference between averages	Value of calculated T	The level of significance	The direction of significance
Av.	Std.	Av.	Std.				
59.4	13.71	78.95	11.93	19.55	11.97	0.01	For Post Application (Augmented Application)

By checking statistical schedules about T Value that calculated, it found that it is a statistical significance on 0.1 level for Post Application "Augmented Application" in which the hypothesis is achieved, which states that "The design of Typographic textile fabrics provide positive user attitude for e- marketing augmented application". As average degrees of sample individuals' attitude towards experience in pre-application were found 59.4 and standard deviation 13.71, while their average degrees of attitude in post-application were 78.95 and standard deviation 11.93. Difference between averages 19.55. This difference has statistical significance at the level of 0.01 for post-experience (augmented application).

13- Discussion

It is clear from the above that the design of typographic textile fabrics contributes in granting the user the marketing positive attitude towards augmented application, which incite them to demand the product and purchase it, ad in their use of the application, they appear a positive response towards it, this may be due to the following:

- The electronic augmented experience makes shopping operations easier for users and provides them with designs in a modern and attractive way that fits the current time.
- Interaction and free control by users in augmented marketing experience contribute to granting them the positive attitude of the application and choosing the appropriate design according to his desire.
- The adoption of designs consisted of typography and developing the way to provide it to the user in a modern interactive way contributes to attracting users.
- High realism in the textile fabric structure on the 3D model and the availability of interacting with it in a freeway that enables users to watch it from all sides have an effective positive impact on displaying fabrics and thus attracting the user.
- Modern augmented applications for e-marketing affect the provision of a better life for users by helping them to fulfill their needs more easily, without more effort.
- The use of modern e-marketing means helps users to develop their technological skills.

14- References

- Ahmed Salman Assem, Heba El Desoki & Fatma Shazly Abdel Aal. (2018). The optimum Properties of Treated Knitted Fabrics to Resist Growth of Bacteria,, Candida.
- Ali El Sayed Zalat. (2005). An Introduction in Textile Science, *Dar Al Salam for Printing and Publishing*, Mansoura.
- Amany Mohamad Shaker. (2018). Utilizing Modern Jacquard Programs to Design and Produce Innovative Islamic Upholstery Fabrics, *International Conference of the Faculty of Applied Arts*, Cairo.
- Amira Farghali. (2015). *Study of the impact of production and installation of polyester filaments technology differences on the functional and aesthetic properties*. Unpublished Ph.D. Thesis, Faculty of Applied Arts, Helwan University.
- Amira Saad Mahmoud. (2012). *Textile designs effectiveness in reviving Islamic arts*, Faculty of Applied Arts Conference, Egypt.
- Ansaf Nasr & Kausar Zoghbi. (2005). Studies in textile, *Arab Thought House*, Egypt.
- Ashraf Mahmoud Hashem. (2009). *Textile Science*, Dar Al Maarif Organization, Menoufia University.
- Baek, T. H., Yoo, C. Y., & Yoon, S. (2016). *Augment yourself through virtual mirror: The impact of self-viewing and narcissism on consumer responses*, *International Journal of Advertising*, 37 (3), 421–439.
- Baraa Ali Hussien Houria. (2018), The impact of modern Typography attitude on the design of commercial advertisement in Jordan, Unpublished master degree, Faculty of Architecture and Design, Jordan.
- Berkeley D. (1937). *Printing Types, their History, Form and Use.* Harvard University Press, Cambridge.
- Block, B. and McNally, P. (2013). *3D Storytelling: How Stereoscopic 3D Works and How to Use It*. England. Focal Press. 2013.
- Demarquis, A. (2004). *Promotion on-line*, France, mémoire de fin d'études,
- Ezz Al-Din Abdel Rahman, (2008). *The Development Of Traditional Hand Weaving Looms in Sultanate Of Oman*, Unpublished Master, Sudan University Faculty of Fine Arts.
- Fadia Hashem Zakarya. (2017). *Authenticity and modernity of the Islamic calligraphy aesthetics and applying in textile*, Architecture, Arts and Humanistic Science For Publishing, Jordan.

- Magazine, 5, 1:17.
- Faten Abdel Tawab Mohamed. (2008). *Specification for Achievement of Comfort Property in Ready Made Garment*, Unpublished Ph.D. Thesis - Faculty of Applied Arts, Helwan University.
 - Feng, Y., and Mueller, B. (2018). The state of augmented reality advertising around the globe: A multi-cultural content analysis, *Journal of Promotion Management*, 25 (4), 1–23.
 - Foad Abu Hatab & Sayed Ahmed. (1985). *Implementations for tests consistency*, Cairo.
 - Frederick W. H., (2009). *Books Before Typography*, (<https://www.gutenberg.org/files/30803/30803-h/30803-h.htm>)
 - Hearle, J.W.S., Grosberg, P. and Backer, S. (2005). *Structural Mechanics of Fibers, Yarns and Fabrics*, Vol. I, Willy – Interscience, U.S.A.
 - Hebatuallah, Abdul Aziz, Magdi , Hani & Samar. *Arabic Typography Role in Magazine advertising Idea Design – as an innovated Visual Language*” http://staff.du.edu.eg/upfilestaff/711/researches/3711_1520848697_.pdf”
 - Holly, R. (2014). *Japanese aquarium uses penguins to make the best AR app ever.*” “<http://www.geek.com/apps/japanese-aquarium-uses-penguins-to-make-the-best-ar-app-ever-1599745/> (Accessed February 12, 2019).
 - Ibrahim Mahmoud El Qasas. (2004). *A designer graphic guide to Typography world*, Greer House for Publishing and Distribution, Jordan.
 - Ibtihal Qouknda. *virtual reality and full-immersion environments*” net.vrinsider.www:// h(Accessed - 15 March 2018)
 - Juan C. Arbeláez-Estrada, A, Osorio-Gómez, G. (2013). *Augmented Reality Application for Product Concepts Evaluation*, *Procedia Computer Science*, 25, 389 – 398
 - K.M Evater.(2010). *Attitude in Education*, Mokhtar for Publishing and Distribution Organization, Cairo.
 - Mahmoud Ahmed, (2015). *Linen in Ancient Egypt*, *Journal of the General Union of Arab Archaeologist*.
 - Mahony S. O. (2015). *A Proposed Model for the Approach to Augmented Reality Deployment in Marketing Communications*, Elsevier Inc., *Social and Behavioral Sciences*, 227-228.
 - Mahony, S. O. (2015). *A Proposed Model for the Approach to Augmented Reality Deployment in Marketing Communications*, *Social and Behavioral Sciences*, 175, 227–235. doi:10.1016/j.sbspro.2015.01.1195.
 - Mohamad Gamal. (2006). *Textile raw materials*, Amer Printing and Publishing, Mansoura.
 - Mohamed Al Jamal, El Sayed Ali Zalat Hassan & Nora Ibrahim. (2010). *Studying the influence of textile different compositions on some of the functional performance features of upholstery fabrics*, *Specific Education Research Journal*, 18, 556:58.
 - Mohamed Mostafa, (2018). *General Opinion about Virtual Reality*, *Al Arabi Publishing & Distribution*, Cairo.
 - Mona Ahmed Wageeh Ali. (2009). *Different impact of some practical methods to produce yarns on both the functional and aesthetic properties of summer clothing fabrics*’ Unpublished Ph.D. Thesis - Faculty of Applied Arts, Helwan University.
 - Nashwa Mustafa Nagy. *Development of Textile Handicrafts and Re-competition Locally and Internationally*, *International Design Journal*, 2, 207:213.
 - Negm Negm (2004), “*Electronic Management: Strategy, Functions, and Problems*”, *Mars Publishing House*, Saudi Arabia.
 - Omran Mohammad Ahmed. (2016). *The impact of Latin typeface on its rival Arabic typeface design*”, *International Design Journal* (<https://www.faa-design.com/conf/pdf/101f.pdf>)
 - Russell, M. (2012). *11 Amazing augmented reality ads.* “<http://www.businessinsider.com/11-amazing-augmented-realityads-2012-1?opD1/#-petes-and-clear-water-show-the-beauty-of-their-beaches-6> (Accessed January 12, 2019).
 - Saadia Khalil Ibrahim. (2002). *Impact of different types of raw material on the natural and mechanical features of fabrics*”, *Researches in Arts*, 14 (3) 29:40.
 - Safwat Farag. (1980). *Psychometric*, Dar Al Fekr Al Arabi, Cairo.
 - Şahin,D, Abdullah, T. (2016). *Augmented reality applications in product design process*. *Global Journal on Humanites & Social Sciences*, 3, 115-125.
 - Scholz, J., & Smith, A.N. (2016). *Augmented reality: Designing immersive experiences that maximize consumer engagement*, *Business Horizons*, 59 (2), 149–161.
 - Shimaa Salah Sadek. (2018). *Maximizing the*

- Rule of Augmented Reality Technology for Interactive Advertising in commercial malls, *Journal of Architecture, Arts and Humanistic Science*, 12 (2), 259–278.
- Shimaa Salah Sadek. (2018). Adapting Typography in advertising design for rooting visual identity in the tourism advertisement, *Journal of Architecture, Arts and Humanistic Sciences*, 13 (1), 267-287.
 - Shimaa Salah Sadek. (2016). *The strategy of advertising axiology's Integration and its effect on the consumer's sociology*, Unpublished Phd thiese, Damitta University.
 - Uva A. E. , Fiorentino, M., Monno, G. (2011). Augmented Reality integration in Product Development, *International conference on Innovative Methods in Product Design*, June 15th – 17th, Venice, Italy.
 - Uva, A., M. Fiorentino, A., Monno, G. (2011). Augmented Reality integration in Product Development, *International Conference on Innovative Methods in Product Design*, Venice, Italy.
 - Yan Shen. (2010). Comparisons and Evaluation of Test Methods for Fuzzing and Pilling Resistance”, *China Fiber Inspection Journal*,