

ISLAMIC GEOMETRIC PATTERNS: ITS INFLUENCES AND IDEATION IN ART PHOTOGRAPHY

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ABSTRACT

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Photography is a very broad communication style used in our society and it is a way of communicating as in visual style of expression to touch others in various ways. This is a process of creation, activity and art creating something for others to value and appreciate the captured image of photography. The Shari'ah of Islam has not permitted creating pictures of living things or even taking pictures of them. The objectives of this research is to explore the ideation of Islamic geometric patterns and to be experimenting with the geometric Islamic patterns style into art photography. This study also examines the possibilities of creating art photographic influences with the geometric Islamic patterns. Experimental approach in terms of using adobe Photoshop was used to conduct the study. The photography images produce for this research is only scope on modern architecture. It is to understand the Islamic geometric pattern and implement its characteristic into photography to create symmetry patterns in art photography. The result gathered from this research contributes towards of enhancement and creating new art photography with modern architecture and Islamic art approach, creating pattern variation and innovation.

Kata Kunci: Art Photography, Geometric, Islamic Art, Experimental

INTRODUCTION

The ideation of making photography was invented by Muslim scholars. Among the big names that are the cornerstone of the invention of photography are Abu Ali Muhammad bin Al- Hassan bin Al-Haitham Al-Basri Al-Misri. He is also known as Al-Haitham or Alhazen in the West. And the second scholar known as Kamaluddin Al-Farisi. According to the theory of Ptolemy and Euclid, humans emit light through the eye organ to see an object. This statement is answerable by Al-Haitham with his argument which says that it is not the human eye that emits light, but the object it sees reflects light (Ustaz Azhar Idrus and Imran Burhanuddin, 2015). It is the theory about the lens, the lens in the human eye forming a picture in the retina. The Shari'ah of Islam has not permitted creating pictures of living things or even taking pictures of them but *Sayyidina Ibn Abbas*

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said: *'If you must make pictures for a livelihood, make it of those things which do not have a life (trees, mountains, landscapes etc)'* (Mufti Muhammad Yusuf Danka, 2014).

In the era of the new technology growing every second we need to understand of important of photography. Whereas photos are allowed - as required for document identity, or to identify or track criminals [e.g. "Wanted" posters and notes like - translator], or for educational purposes that cannot be achieved otherwise. The principle in shari'ah is that we do not have to exaggerate what is needed (Shaykh Muhammad Saalih al-Munajjid, 2017).

Everyday there is always a something new for us to learn in photography and it is a really fascinating about it. Photography is a very widely communication style used in our society and it is a way of communicating as in conduct visual expression to touch others in a variety ways (Ingledeu, 2005). From the statement of Ingledeu (2005), it is the process of creating, an activity and art of creating something for other to value and appreciate the captured images of photography. It is also a translation of the external visual reality into material form through the device and chemistry, digital technology, or a combination thereof (Edwards, 2006). Since the 1950s, photography has received wide acceptance as a form of art around the world. Among of the art photography subjects are landscape, flora, fauna, architecture and many more.

In this research the scope of subject matter only focused on architecture photography because Rendell (2006) suggest that to develop as a critical practice architecture must see art and move beyond its traditional boundaries field and place between disciplines. As a cultural production tool art can offer architectural opportunities for reflection and critical action (Rendell, 2006). In architecture photography it is divided in two part, interior (space, pattern, composition and etc.) and exterior (building) photography (Schulz, 2012).

The objectives of this research is to explore the ideation of Islamic geometric patterns and to be experimenting with the geometric Islamic patterns style into art photography (exterior). This study also examines the possibilities of creating art photographic influences with the geometric Islamic patterns. Experimental approach in terms of using adobe Photoshop was used to conduct the study. The photography images produce for this research is only scope on modern architecture. It is to understand the Islamic geometric pattern and implement its characteristic into photography to create symmetry patterns in art photography. The result gathered from this research contributes towards of enhancement and creating new art photography with modern architecture and Islamic art approach, creating pattern variation and innovation.

THE ROLE OF PHOTOGRAPHY IN ISLAMIC ARCHITECTURE

The word photography comes from the Greek, from the word photos and graphos. Photo means light and graphos means writing / painting (Bill Smith, 2001). The simplest definition for photography is to paint using light where the process of producing images requires the use of the camera and is combined with

the source lighting. According to (Syarifudin, Ismail Kaliky, Aisa Manilet, 2015) photography is a combination of science, technology, and art and as a result of these combinations create a harmonious work. The role of photography in conveying information and recording of pictures is undeniable as it contributes greatly to the data that can be used as a reference for information about a matter.

According to Mulyanti (2007) the photographic medium has a variety of useful functions in the form of documentation, research and as a result of art full of its aesthetic value because with only one piece of the picture it can describe the entire story. There are many researchers who use photographic images as their study material to explore information sources about the influence of Islam in Malaysia by looking at the photos taken by photographers in the past. Researcher Abdul Halim Nasir also made a photographic image as a study material in his research titled Mosque architecture in the Malay world.

The arrival of Islam in Malaya land can be examined from old photographs taken by previous photographers. Photographic contributions also allow researchers to find and collect valid and accurate data, researchers Ahmad Basri, Suhana, Sharifah & Mrkarius (2007) also use photographic images as a study material in their research entitled the new city / city model concept based on the design traditional city.

In the early days of Islam's arrival in Tanah Melayu, there was evidence and guidance in the presence of photographs of the old mosque taken by the photographer, resulting in the importance of photographic images ultimately seen to facilitate researchers to dump and research information more deeply about the social development of the Malay community (Nadzri, Meor, Shahizan & Mustakim, 2017). Photography is an important medium because it captures photographs and allows people in today's time to be able to see and refer to information. Without any photography it is impossible we can see what happened in the past. Islam and architecture are inseparable as early in Islam came to the land of Malaya to create the architecture of worship which became one of the forms brought in during the colonial period.

Islamic religion is the official religion in Malaysia and it has been practiced under the Malaysian constitution in item 3 that Islam is the religion of the Federation; but other religions can be practiced peacefully and peacefully in any Federal Section (Department of Information Malaysia). The basic element in the Islamic religion is to establish a five-day prayer daily and it is obligatory for all mature and sane Muslims (Islamic Religious Department, Malaysia).

Participating in the duty of performing prayers has witnessed the existence of the mosque as a center for the activities of the worship of Islam. Mosque means the place of prostration and its construction contains Qibla elements, mehrab, minbar or pulpit, imam, azan, minerate, solah, Friday solah, wudhu and Sehn *sen* (Peter Machen & Siobhan Gunning).

Obviously here photography also plays an important role of, without photography how we can get to know the main features of the mosque architecture. Without photography also how we can look for Islamic characteristics in the mosque architecture. Without photography as well as how we can verify that the

created architecture has an influence and characteristic of Islam. Zulkifli Hanafi (1985) in his authorization defines "Islamic Architecture encompasses all areas that practice Islamic principles from Mahgribi to the Malay Archipelago, comprising various cultures making their artworks so diverse and diverse, crafted by local culture".



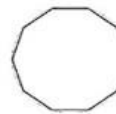


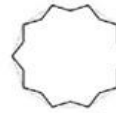

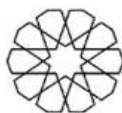
ISLAMIC GEOMETRIC PATTERNS CHARACTERISTIC

The earliest written document on reliable geometry was written in the early nineteenth century through the history of Islamic science is the mathematical book Khwarizmi Al-Kitāb almukhtaṣar Fī hīsāb al-ğabr wa'l-muqābala (The Compendious Book on Calculation by Completion and Balancing) (Mohammed, 2000). There are 3 Primary Characteristics of Islamic Geometric Decoration according to Metropolitan Museum of Art (2004):

Characteristics of Islamic Geometric	
Repetition and illusion of infinity	Most patterns are derived from a grid of polygons such as equilateral triangles, squares, or hexagons. Can be repeated and infinitely extended into space.
Symmetry	Repetition and mirroring of one or more basic design usually shapes such as circles and polygons. Creates a sense of harmony.
Two-dimensionality	Most Islamic geometric design is two-dimensional. Applied to flat surfaces, rarely no shading or background-foreground distinction. Create interlocking or overlapping designs that create the illusion of depth and produce an aesthetically pleasing and visually playful composition.

Table 1 Primary Characteristics of Islamic Geometric Decoration by Metropolitan Museum of Art (2004)

The basic tool for construct a geometric designs is Compass and ruler, a tool that generates circles and lines, in which all the designs are based. Using both simple forms, the artist can create endless variations of patterns and motives by repeating a single geometry unit laid out in accordance with one basic principle (Metropolitan Museum of Art, 2004). For example, decorative geometric patterns can be traced to building in the Islamic world. As an inspirational to the artist, it is a reflection of Islamic art, whether in structure, symbolism or aesthetics. Geometric patterns occur in wealthy wealth throughout the Islamic culture with diversity, many materials and surface cover (Al-ainati, 2012). These are the types of Islamic geometrical patterns used in this research to create art photography:

6-point Geometrical pattern	8-point Geometrical pattern	10-point Geometrical pattern
 Hexagon	 Octagon	 Decagon
 6-point Star	 8-point Star	 10-point Star
—	 8-fold Rosette	 10-fold Rosette

Source: Abdullahi & Embi, 2013

According to Abdullahi and Embi (2013) there are 3 types of geometric patterns. 6 points, 8 points and 10 points. It shows that at some point, both sides of the 6-point star are either identical or different, thereby making hexagonal deformed (ie, rosette petals). Interestingly, the Islamic geometric pattern follows a difficult construction path, where polygons are built from the most easily formed form (ie, hexagons) to more complicated polygons and stars. However, the primary characteristic of Islamic Geometric Decoration such as Repetition and Infinite Illusion, Symmetry and Two Dimensions are used to construct the geometric patterns. In this research, the ideation of the primary characteristic and types of geometric patterns will be use to explore and to be experiment into art photography (exterior). This study also examines the possibilities of creating art photographic influences with the geometric Islamic patterns.

METHODOLOGY

This research study start with exploring the Islamic geometric patterns and experimenting with the geometric Islamic patterns style into art photography. The Islamic geometric patterns characteristic identified to be use as a guidelines to examine the possibilities of creating art photographic influences with the geometric Islamic patterns. The content analysis will define the common types of Islamic geometric patterns used and experimental approach in terms of using adobe Photoshop was used to implement Islamic geometric patterns characteristic into photography to create symmetry patterns in art photography The result gathered from this research contributes towards of enhancement and creating new art photography with modern architecture and Islamic art approach, creating pattern variation and innovation.

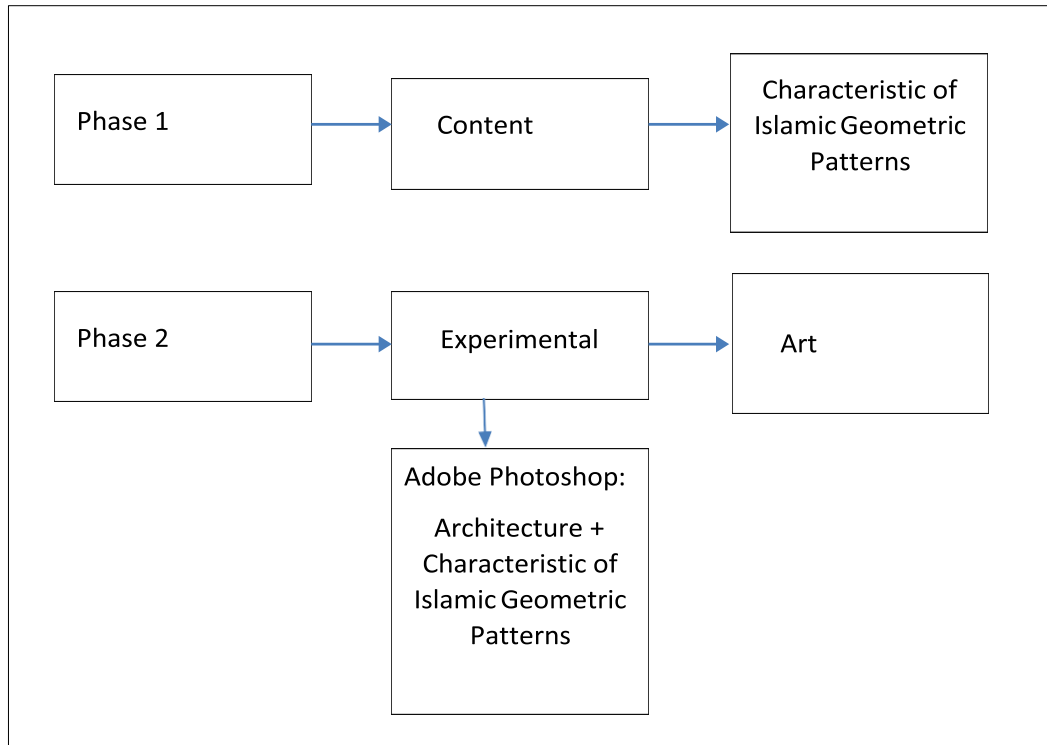


Chart 1 Research Design For Experimental Process

DISCUSSION OF FINDING

In this section, the discussion is based on data collected from the content analysis and experiment sessions of Islamic geometric patterns and creating art photographic influences with the geometric Islamic patterns. There are two subsections; exploring the Islamic geometric patterns, and second to identify the type and characteristics to examine the possibilities of creating art photographic influences with the geometric Islamic patterns.

1. *Geometric Patterns Characteristics and Types*

Islamic

From the content analysis there are 3 Primary Characteristics of Islamic Geometric Decoration (Metropolitan Museum of Art, 2004). The Characteristics of Islamic Geometric are repetition and illusion of infinity which it is the most patterns and derived from a grid of polygons such as equilateral triangles, squares, or hexagons. Can be repeated and infinitely extended into space.

Second is Symmetry. It is a repetition and mirroring of one or more basic design usually shapes such as circles and polygons. Creates a sense of harmony. And third is Two-dimensionality. Most Islamic geometric design is two-dimensional. The patterns applied to flat surfaces, rarely no shading or background-foreground distinction. Create interlocking or overlapping designs that create the illusion of depth and produce an aesthetically pleasing and visually playful composition. And there are 3 types of geometric patterns, 6 points, 8 points and 10 points. It shows that at some point, both sides of the 6-point star are either identical or different, thereby making hexagonal deformed (ie, rosette petals). Interestingly, the Islamic geometric pattern follows a difficult construction path, where polygons are built from the most easily formed form (ie, hexagons) to more complicated polygons and stars. However, the primary characteristic of Islamic Geometric Decoration such as Repetition and Infinite Illusion, Symmetry and Two Dimensions are used to construct the geometric patterns (Abdullahi and Embi, 2013).

2. *Photographic Influences With The Geometric Islamic Patterns*




Art

Photography, Architecture and Art in combination provide memorable wonders for the eye (Fisch, 2013). The combination of photography, architecture and Islamic art definitely will create an artwork that will capture the viewer's attention and eyes towards the photograph produced. It is stated by Berger (2008) *it is seeing which establish our place in the surrounding world, we explain that world with words but words can never undo the fact that we are surrounded by it. The relationship between what we see and what we know is never settle.*

Transformation of architectural structures approach with Islamic geometric patterns influences creates a very stunning geometric shape and line compiles. The

series of artwork showed the realistic of the modern building in order to showed the viewers the exquisite of the architecture, creating the moments and adding with Islamic geometric pattern characteristic to create the mood of modern and contemporary appreciation toward the photograph taken. The photograph created a repetition and mirroring of one or more basic design usually shapes such as circles and polygons.

It creates a sense of harmony and also to reflect and clarify the things that really happen at that time and in a real situation. It is the feeling of the photographer himself in deliberating the information and communicates with the viewers. Moreover, images have been used to represent and make meaning about various elements such as nature, science and as well as representing imaginary worlds and abstract. These are the sample of the art photography with the ideation and influence from the Islamic geometric pattern characteristic and types:

Geometrical Pattern	Art Photography	Characteristic & Types
<p>6 Point (Hexagon)</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">  <p>Hexagon</p> </div> <div style="border: 1px solid black; padding: 5px;">  <p>6-point Star</p> </div>		<ul style="list-style-type: none"> - Hexagon - Both sides identical - Repetition - Infinite Illusion - Symmetry - Two-dimensionality

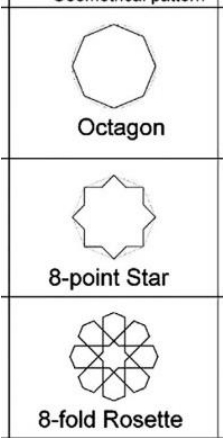
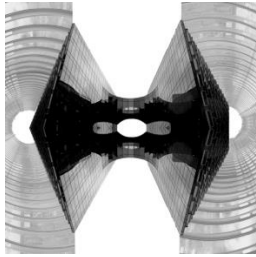

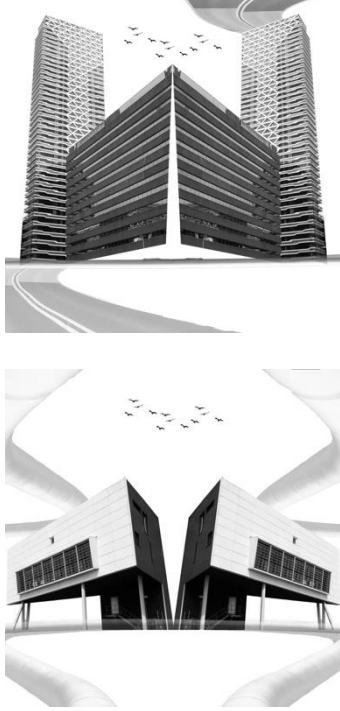
<p>8 Point (Octagon)</p>  <p>Octagon</p> <p>8-point Star</p> <p>8-fold Rosette</p>		<ul style="list-style-type: none"> - Hexagonal deformed - Polygons are built from the most easily formed form - Repetition - Infinite Illusion - Symmetry - Rosette petals - Two-dimensionality
<p>10 Point (Decagon)</p>  <p>Decagon</p> <p>10-point Star</p> <p>10-fold Rosette</p>		<ul style="list-style-type: none"> - Hexagons deformed - More complicated polygons and stars. - Repetition - Infinite Illusion - Symmetry - Rosette petals - Two-dimensionality

Table 2 The Sample Of The Art Photography With The Ideation And Influence From The Islamic Geometric Pattern Characteristic And Types

(Art Photography by Azmil Aswad Che Mat, 2015)

The idea of the editing is to compose the original images with the characteristic of Islamic geometric patterns. The used of liquefy and eraser to enhanced the value, shape and composed the images toward the perfection idea and shape of minimalist, symmetry and the idea that photographer wanted. The art photography shows that the ideation and influences of Islamic geometric patterns can create an abstract photography shows the modern architectural of building and showed the patterns, space, line and shape for viewer's eye catching. It is the symbolism of repetition, symmetry and illusion of infinity.

CONCLUSION

The overall conclusion of this study can be summarized first is the primary of Islamic geometric patterns are repetition and illusion of infinity, Symmetry and Two-dimensionality. The types of Islamic geometric patterns are, 6 points, 8 points and 10 points. It shows that at some point, both sides of the 6-point star are either identical, thereby making hexagonal deformed can illustrate the 8 points and 10 points patterns. The patterns will be more complicated polygons and stars due to the repetition, infinite illusion and symmetry. It can create a complex rosette petals pattern.

The second important thrusts as the outcomes of this study are to emphasize on the ideation and influences of Islamic geometric patterns for art photography. In order to produce a good influences from the Islamic geometric patterns there are several fundamental characteristic that need to be included into the art photography. Therefore this study conclude and suggest for further research and innovation, geometric filter apps can be generate so that the user can experiment with different types of object and make more variation of patterns and designs influence from geometric Islamic patterns.

REFERENCES

- Abdul Halim Nasir. (1995). *Seni Bina Masjid di Dunia Melayu-Nusantara*. Bangi:Universiti Kebangsaan Malaysia.
- Abdullahi, Y., & Embi, M. R. Bin. (2013). Evolution of Islamic geometric patterns. *Frontiers of Architectural Research*, 2(2), 243–251. <https://doi.org/10.1016/j.foar.2013.03.002>
- Al-ainati, M. J. (2012). *Exploring Islamic Geometries*. Berger, J. 2008. *Ways of seeing*. London: Penguin
- Edwards, S. 2006. *Photography: A Very Short Introduction*. UK: Oxford University Press Print.

- Ellen Fisch Photography. (2015). Ellen Fisch Photography. Retrieved from <http://www.ellenfisch.com/>. [Accessed 18 May 2015].
- Hall, S. (1997). *Representation: Cultural representations and signifying practices*. Thousand Oaks, CA: Sage.
- Ingledeew, J. (2005). *Photography*. UK: Laurence King Publishing.
- Jabatan Kemajuan Islam Malaysia. (2015). Retrieved from <http://www.islam.gov.my/> [Accessed 18 August 2017].
- Machen, P. & Gunning, S. Brochure Produced by the City Architecture Department eThekweni Municipality 166 KE Masinga Road, Durban 400.
- Metropolitan Museum of Art (2004). *Islamic Art and Geometric Design: Activities for Learning Activities for learning*. Metropolitan Museum of Art publications.
- Mohamed, M. (2000). *Great Muslim Mathematicians*. Universiti Teknologi Malaysia. Mulyanta, Edi S. (2007). *Teknik Modern Fotografi Digital. ANDI*. Yogyakarta. 2007.
- Mufti Muhammad Yusuf Danka. (2014). The Conditions of Pictures and Photography being Impermissible in Light of the Shari ' ah Why are pictures & photography prohibited in Islam ?, 1–5.
- Mustaffa Halabi Azahari. (2011). *Photography: Its significance strands and values in education*.
- UiTM: University Publication Centre.
- Rendell, J. (2016). *Art and architecture: a place between*. London: IB Tauris, 2006.
- Schulz, A. (2012). *Architectural Photography: Composition, Capture, and Digital Image Processing*. Rocky Nook, 2012.
- Smith, B. (2001). *Designing a Photograph: Visual Techniques for Making your Photographs Work*.
- Syarifudin, Ismail Kaliky, Aisa Manilet. (2015.) *Peranan Teknologi Fotografi Dalam Perawatan Naskah Kuno Di Maluku*.
- Shaykh Muhammad Saalih al-Munajjid. (2017). Islam Question and Answer. Retrieved from <https://islamqa.info/en/365> [Accessed 18 August 2017].
- Ustaz Azhar Idrus and Imran Burhanuddin. (2015). *Fotografi Gaya Mukmin*. PTS Publications & Distributors Sdn Bhd, 2015.
- Zulkifli Hanafi. (1985). *Kompedium Sejarah Seni Bina Timur, Pulau Pinang: Universiti Sains Malaysia*.