Elderly Muslims Perceptions
on Grateful and Calm Digital Images

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Abstract—This study is to identify digital images based on theme gratefulness and calmness and also to evaluate elderly Muslim perceptions on the images. There is lack of study from the past about it. The methods used are personas, interviews and survey. The findings indicated most of the personas select nature and text images for theme grateful, whereas nature and building images for theme calmness. There are four factors that influence personas' emotion perceptions which are visual content, social context, temporal evaluation and location influence These factors on images give them spiritual emotional impacts. Significant from the study, muslim designers could understand personas preferences and the designer could give more meaningful and quality images for target personas as for the future work, more study could be done with big sample sizes, different groups of personas such as children, different types of themes such as happiness and sadness digital images, and also different type of perceptions such as an auditory.

Index Terms— *Elderly Muslim, Emotion perception, Digital images, Spiritual images, Grateful theme, Calm theme*

I. INTRODUCTION

In the rapid development of digital image technology and wide-spread popularity of social networks, people have become used to share their lives and express their opinions using images, videos and text. The explosively growing volume of online social data have greatly motivated and promoted the study on large-scale multimedia analysis [1].

Huge collection of digital images are available since the development of the internet and availability of digital devices such as scanner, digital camera, and phone camera that growing exponentially [2]. The elderly Muslims in Malaysia are also parts of communities that use the technology. Most of them own smartphones and personal computers.

Emotions for the elderly Muslims are various, such as happiness, sadness, gratefulness, calmness and others. They are increasingly using secondary control strategies, such as emotion regulation, aimed at changing the self in order to adjust to a given situation, rather than using primary control strategies that change the situation themselves.

Study that has been conducted discovered that they are heavily depending on spiritual activities to dedicate last years of life to Allah and in order to bring a peace of mind. It is related to the Gerotranscendence (GT) Theory which states that ageing is characterized by a shift from a materialistic and rational view of the world to a more infinite and ultimate one, and automatically will increase in life. Each individual moving into living the old age will experience this type of changes or development, including a redefinition of self, relationship with others, searching for the meaning of life and satisfactions [3].

This study is focusing on the theme of gratefulness and calmness   themes to elderly Muslims. These themes are achieved through ecstatic communion with Allah and realize that Allah is formless, omnipresent, omniscient far above all bodily changes [4]. Past research explored on the principles of art-based emotion features in order to classify and score image emotions for understanding the relationship between them, however, there is still lack of past research that focuses on the elderly Muslims perceptions on digital images based on themes gratefulness and calmness.

II. LITERATURE REVIEW

A. Perception

Perception is the procedure where the mind experiences to comprehend the jolts. Perception is not just the brain's response to stimuli, but it is also an interpretation based on memories and various cultural cues; it relies on signs to indicate certain meanings. Several past research related perceptions are done such as a study to perceive opinions from students on the adoption of Customer Centered Services to facilitate the ICT services specifically at public University in Malaysia and University Malaysia Pahang (UMP) as a case study [5] also, perception study on specific concerns, worries of loss of control of AI, ethical concerns for AI, and the negative impact of AI on work have grown in recent years [6]. Furthermore, there is a study of perception on e-learning to measure the distinction between learning content and websites content that need to parallel because both could affect user's perception and satisfaction [7] Therefore, studies on perceptions are varies in term of different types of users and subject matters.

B. Elderly People

Based on the current trend as stated by the Department of Statistics, Malaysian population is expected to reach 35 million by 2020, with 3.4 million being senior citizens. Malaysia's population continues to reach the status of an ageing nation by 2030, at that point people who aged 60 and above make up 15 percent of the population. Thus, this is important to consider about the need for the elderly using the technology.

C. Elderly Muslims Perceptions

Elderly Muslims perception seeks for quality of life. Their perceptions change to achieve meaning, satisfaction and peaceful life as growing older. The perceptions are both

reflected and influence the thoughts, feelings, and actions. The elderly Muslims will often have a feeling of cosmic communion with Allah and redefinition of space, time, life and death. Health-promoting lifestyle influences the depression of elderly people through aging perceptions and social support moderates the influence of aging perceptions on the elderly depression [8]. The term that commonly used interchangeably with term perceptions would be ageism, attitudes, beliefs, discrimination, prejudice, and stereotypes [9].

D. Elderly Muslims Emotions

Theories of emotional motivational life-span development propose normative shifts in emotional goals and strategies for elderly Muslims. One gets to a certain age in his life, there is a tendency to lie low and finally embrace that inner peace that has so much eluded one's grasp through the years [10].

Gratitude is a feeling that occurs in interpersonal exchanges. Researchers are beginning to unravel the biological and developmental underpinnings of gratitude, and they are finding reason to believe it may be easier to feel grateful as they grow older [11].

As one progresses spiritually, they increasingly harmonize with the experience of gratitude in Islam, and as one draws nearer to the Divine Presence, he or she realizes that real joy and happiness are through expressing gratitude in Islam.

Calmness is more dynamic and more powerful than peace. Calmness gives the devotee power to overcome all obstacles in life. Even in human affairs, the person who can remain calm under all circumstances are invincible. The soul, made in the image of the spirit, is ever calm and eternal [4].

Four factors that influence users' emotion perceptions which are visual content, social context, temporal evaluation and location influence [12].

The visual content of an image can directly influence the emotion perception of viewers. Social context is one viewer's emotion may be easily and largely affected by the social environment that he lives in. Temporal evolution gives additional information with respect to emotion prediction. Location influence is where and when a picture is taken which may contribute to emotional variation.

D. Psychology of Images

Photography can function as dialogue in a visual language, serving as an alternative form of communication, which can lower anxiety surrounding verbal communication by using an enjoyable format for the user.

Images have long been found to be an emotionally powerful means of expressing human experiences [12]. In addition, images offer up the possibilities of a slippery surface of meanings and potential narratives for the viewer, which are the rich veins that phototherapy explores [13]. Through the process of art making and creative expression, counsellors can assist in the reduction of a variety of distressing psychological symptoms [14][15].

The process of expression through art media and the products created in an art therapy session engage and are perceived predominantly through the tactile-haptic and visual sensory and perceptual channels, and then are processed for their effect, associations, and meaning through cognitive and verbal channels [16]. The image could be a nonthreatening methodology that may permit the users to convey that meaning, struggle, and emotions that cannot simply be spoken. Along with providing a helpful avenue to converse a difficulty and express emotions in an artistic and abstract way, a picture might offer the simplest way to figure around defense mechanisms [14]. The image itself can capture the user's inner world perceptions, and contextual experiences. It is more accurate and reliable to obtain the meaning as identified by the user to understand the image's construction, thoughts, feelings and behavioral significance [17][18].

These actions contain completely different motor, sensory system, visual, emotion, and cognitive aspects of processing data with the activation of the corresponding neurophysiologic processes and brain structures [16].

It is obviously that art products such as images have helped improve understanding and perception [17] because of the ability to provoke memories and feelings, both positive and negative [19].

E. Persona Method

Personas focus attention on a specific target audience. A persona is a way to model, summarize and communicate research about people who have been observed or researched in some way. Each persona represents a significant portion of people in the real world and enables to focus on a manageable and memorable cast of characters, instead of focusing on thousands of individuals. Personas aid researchers to create different designs for different kinds of people and to design for a specific somebody, rather than a generic everybody.

The personas are concrete embodiments of the needs and goals that the team designs for and they are easier to talk about, remember and get shared views, list of features and an abstract description of "the user" [20].

III. METHODOLOGY

This research explored elderly Muslims' perceptions on digital images. The methods used are persona [21], interviews and survey.

A. Digital Images

The selection on 48 images digital images with theme gratefulness and calmness were performed by searching through web portal *Google images*. The images are taken from the top images suggested by the *Google Image*. The images are chosen based on the selected themes.
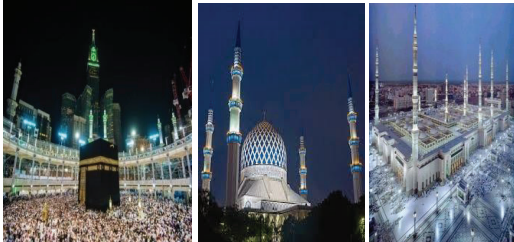
Resulting images from the search were further sorted by popularity and the top 24 images were chosen and incorporated with the interview and survey questions. The images are classified into several elements which are Nature, Nature and text, Text, People, Text and People, Illustration, Building, Image, and Image and Text.

Calmness images:

Nature
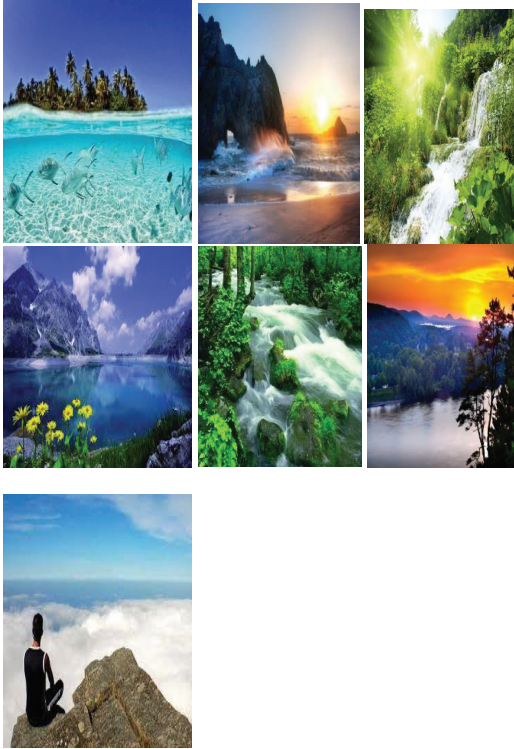
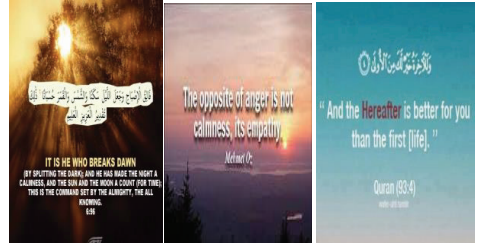People

Image

Illustration

Building

Text

Nature and Text

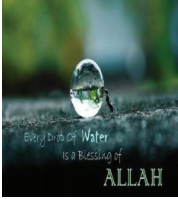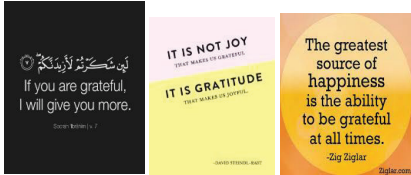*Grateful images:*

Nature

Nature and Text

Image and Text

Text

Illustration

B. Participants

Method personas including interview and survey was conducted with five elderly Muslims ages ranging from 60 to 69 years old which are in the Baby Boomers Generation [22] The personas are selected from a neighborhood at Kampung Bonggol Pasir, Taiping, Perak. The personas are technology savvy and familiar with digital images to ensure that they can easily understand the purpose of the study. The interview session was conducted within 30 minutes as suggested by [23].

TABLE 1: Interviewee Gender

Categories (Gender)	Total
Male	3
Female	2

Table 1 shows five personas including three males and two females.

TABLE 2: Interviewee Educational Level

Educational Level	Total
Diploma	2
Bachelor's Degree	2
Master's Degree	1

Table 2 displays types of educational levels of the personas including diploma, bachelor's degree and master's degree.

TABLE 3: Information Personas

Persona	Name	Sex	Age	Education	Profession
1	Noor Affandi bin Ariffin	Male	68	Bachelor	Pension Government Officer
2	Zamilah binti Ismail	Female	69	Diploma	Pension Government
3	Muhammad bin Musa	Male	64	Bachelor	Pension Teacher
4	Yahya bin Ahmad	Male	60	Master	General Manager
5	Puteh binti Aminah	Female	60	Diploma	Quality Control Assistant

Table 3 shows information about the personas including their name, gender, age education and profession. Image preferences from personas are Islamic representation, natural images, inspired text. The personas love to share with their friends with meaningful text or images to express at their status during communication through social media such facebook or whatsapp.

C. Elderly Muslims Perceptions

The interview and survey session are conducted within 30 minutes and the questions are divided into three parts including;

- Questions on socio demographic data and background
- A display of 24 images for each theme (grateful and calmness) where a respondent needs to score each image based on preferable that give emotional impact using likert scale from 1 to 5 (strongly disagree to strongly agree).
- Questions on elderly Muslims preferences in term of four factors which consists of visual content, social context, temporal evaluation and location influence.
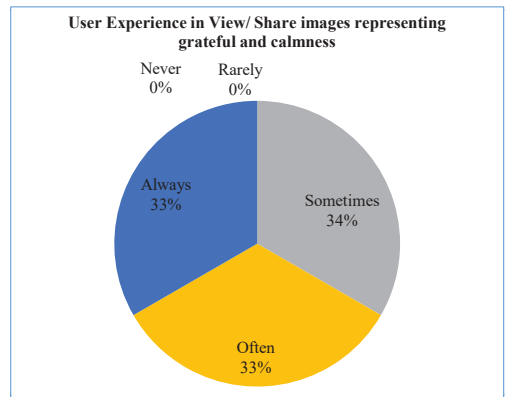

Fig. 1 User Experience in View/ Share images representing grateful and calmness

Fig. 1 shows 34 percent of the elderly Muslims experienced "Sometimes" in view and sharing images that representing grateful and calmness. While 33 percent of them choose for "Often" and "Always". Therefore, most of them love to view and share images that representing grateful and calmness.
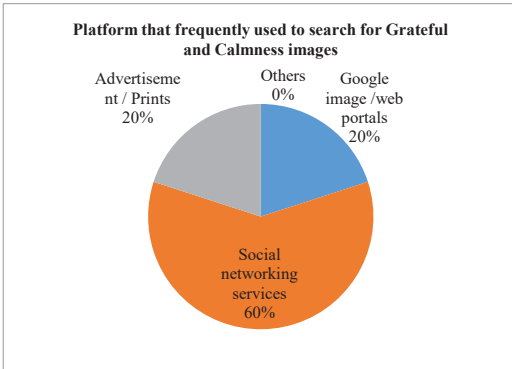

Platform that frequently used to search for Grateful and Calmness images

Fig. 2. Platform that frequently used to search for Grateful and Calmness images

Fig. 2 shows 60 percent the elderly Muslims used social networking services as a platform to search suitable images. Mostly, the images, were shared with their friends through whatsapp, or facebook. Others, grateful and calmness images can be searched through advertisement and web browser.
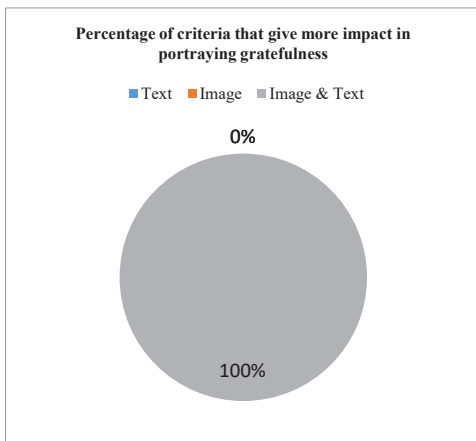

Fig. 3 Percentage of criteria that give more impact in portraying gratefulness

Based on Fig. 3 shows 100 percent of the elderly Muslims agreed that, the combination of image and text give powerful impact in portraying gratefulness to personas.
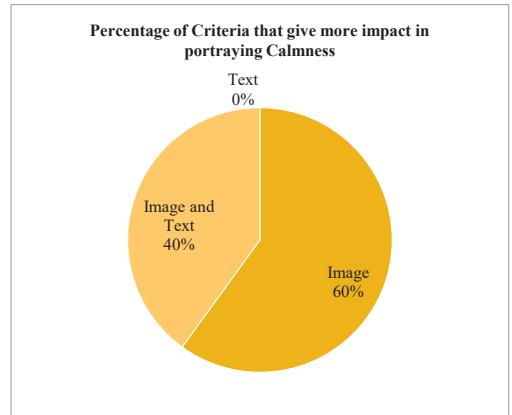

Fig. 4 Percentage of Criteria that give more impact in portraying Calmness
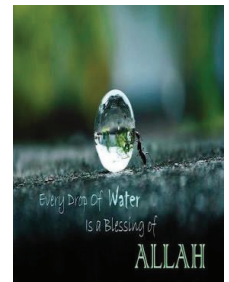
For the calmness image as referred to Fig. 4, 60 percent elderly prefer more on grateful image rather than combination of image and text.

IV. RESULT AND ANALYSIS

The selected images were categorized into grateful images labelled as (A11, A20).
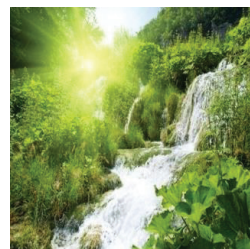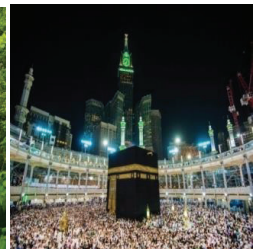

A11

A20

Both images labelled A11 and A20 were the images that collected the highest rate with the average of 4.6. Thus, these images are successful in portraying gratefulness.
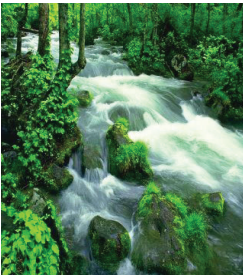
The selected images into calm images labelled as (B3, B6, B20, B23).

B6

B3

B20   B23

The calmness images labelled as B3, B6, B20 and B23 have been rated by the users an average of 4.8. Most of the users feel the calmness when they look at those images. Based on the color that has been selected by the interviewees, most of them choose green as the color for grateful and calmness. Some of them thought that green and blue are the colors of grateful and calmness. According to [24], it mentions that, light purple is said to be color of peaceful. While, there is a scientific logic that green color makes directly on the retina, it could lessen strain on eyes and give calmness to the user. Besides that, blue also is a typically calming and serene color believed could lower blood pressure.

TABLE 4: Perceptions from Personas

	Perceptions	Theme/Image label
Persona 1:	**Social Context:** "The text and image touch the heart to feel calm and grateful".	Image/text A11, A20
	Location influence "As for those who experienced going to Mecca especially would feel very close to the heart and bring calmness"	Building B3, B23
Persona 2:	**Visual Content and Temporal evolution:** "Image and text give direct messages to feel calm and grateful"	Image/text A11, A20
Persona 3:	**Visual Content:** "Nature is some kind of gift from Allah to increase the feeling of grateful and calmness"	Nature B6, B20
	Location influence: "Mosque and Mecca are places that portray calmness"	Building B3, B23
Persona 4:	**Visual Content and Temporal evolution:** "The image portrays meaningful feeling for grateful and calmness"	Image/text A20
Persona 5: .	**Visual Content:** "words represent its meaning for grateful"	Image/text A20
	Social Context: "By looking at His Creation is one of the ways to feel calm and grateful and definitely strongly believe how powerful Allah is"	Building B6, B20

Based on Table 4, the key understanding of perceptions from personas according to the four factors of emotion perceptions on grateful and calm digital images that have given them strong connection to their spiritual beliefs. Personas 2,3,4 and 5 with factors of visual content agree to say that image, text and nature bring the feeling of meaningful for grateful and calmness. Personas 1 and 5 with social context express by looking the creation of Allah, they feel strongly believe the powerful of Allah. Personas 1 and 3 with location influence express experience being at Mecca before this make them feel closely touch with gratefulness and calmness.

V. Conclusion

In conclusion, digital image themes gratefulness and calmness bring spiritual touch to the heart of elderly Muslims and to believe how powerful Allah is whenever digital images are used by themselves and to be shared with others, with the beauty meaning of text, the breathtaking of nature and by looking sacred places such as Mecca and Madinah.

VI. Future research direction

As recommendation from this study could guide muslim designers to understand what are the images that the elderly Muslims most preferred so that the designers could provide with more lively, meaningful and creative digital images in the next design. Furthermore, the designers should investigate and understand preferred patterns of digital images towards different types of personas such as children, teenagers, also different types of themes in digital images to represent anger, sad, happy and also different types of perceptions such as on auditory.

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