

PROFILING MODEL OF MANUSCRIPT AL QUR'ANS DIGITIZATION TOWARDS PRESERVING MALAY ARCHIPELAGO TANGIBLE CULTURE AND HERITAGE

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Abstract: Digitization is the process of changing from analogue to digital form. Manuscript digitization is the process in which rare and old manuscripts are converted to digital file formats so they can be shared online by users from all parts of the world. Also, digitization manuscripts mean of protecting and documenting textual heritage has emerged as an important field in recent times. This digitization activities at National Library Kuala Lumpur began around 1996 in an effort to preserve Malaysian collections and publications. However, until in the middle of 2019 only 30 selected manuscripts have been digitized except the Al-Qur'ans. But, during these three years there already a busy crowd who were interested in exploring al-Qur'an manuscripts. Therefore, need to develop the mechanism to preserve these fragile materials. This paper aims to develop the metadata for the specific structure, motif and pattern decorated in the Qur'ans. The focus is on the Qur'an from the collection of the National Library Kuala Lumpur Malaysia. The research will be conducting with the codicology method and art history approach which focuses on the ornaments styling characters. Hopefully, this model will provide guidance and understanding about the physical description of the manuscript also improve and including preserve the vocabularies of ornament and design from the Malay and archipelago world. With the advancement of information technology, digitization promises documentation and preservation of original texts, facilitating at the same time, greater access for scholars and researchers.

Keywords: digitize, ornaments, vocabulary, Al-Qur'ans, model, tangible culture

Introduction

This paper aim to develop the metadata for the specific structure, motif and patterns decorated in the Qur'ans. There are three objective of this activities firstly is to determine the components of ornament in the Al-Qur'ans from the collection National Library Kuala Lumpur. Secondly is to create a descriptive metadata for the layouts, motifs and patterns found in the Al-Qur'ans from the collection. Thirdly is to promote of access and usage for scholars, researchers and students, without tampering with original copies of manuscript in order to preserved the Malay tangible culture and heritage

Manuscript digitization is the process in which rare and old manuscripts are converted to digital file formats so they can be shared online by users from all parts of the world. Digitization of manuscripts as means of protecting and documenting textual heritage has emerged as an

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important field in recent times. With the advancement of information technology, digitization promises documentation and preservation of original texts, facilitating at the same time, greater access for scholars and researchers

Manuscript Al-Qur'ans

The Qur'an means a perfect recitation. That is the proper name for God's choice because there has been no recitation since ordinary human beings wrote and recited five thousand years ago that can rival the recitation of the Qur'an, perfect and glorious. The Qur'an, according to the term, is the word of Allah SWT. Jibrail conveyed it with direct revelation from Allah SWT. To the Prophet Muhammad, and accepted by Muslims from generation to generation without any change. The Quran is a text consisting of 114 suras or chapters. It has 6616 sentences and 77 934 words and represents 323 672 letters. This holy book was revealed in Mecca and Medina and some surrounding areas.

Therefore, the surah is classified as surah Makiyyah and Madaniyyah. Except for the first few revelations revealed to the Prophet Muhammad by shocking events, each revelation has the context of the current situation to be conveyed. (Ismail and Lois Lamya Al-Faruqi,1986). The scholars carefully observed the Qur'an. They arrange surahs according to their descent. As for the unique features of Makiyyah and Madaniyyah, scholars have examined Makiyyah and Madaniyyah chapters (surah) and come up with some analogous provisions for both, explaining the distinctive features of the language and the issues it addresses. From there, they can generate rules with these features.

They distributed to 30 juzuk together with 30 days in the month of Ramadan for them to be easy to have every day and recite the Al-Qur'an in a month. The Quran is divided into 30 Juz and 60 hizib containing 114 surahs. One hizib is also divided into 4 which are marked on the side of the letter such as $\frac{1}{4}$ hizib, $\frac{1}{2}$ hizib and $\frac{3}{4}$ hizib. Repeatedly, there are 114 suwar (plural of surah) or chapters in the Al-Qur'an. These are divided into 30 juz' (parts), 6,616 ayat (plural of ayah) or verses, 77,934 words and 323,671 letters. Each juz' contains letters, words, sentences, paragraphs, diacritical marks and indications of the total number of verses already recited. All these divisions are potential areas for decoration and illumination.

Al-Qur'ans from National Library Kuala Lumpur

Malay manuscripts serve as an important source of understanding the intellectual and literary heritage of the Malays. The manuscripts cover a wide range of subjects, such as history, religion, law, culture, folklore and legends. The manuscript was written in Jawi calligraphy. It was adapted from the Arabic letters which added five more letters. Manuscripts were written and copied down in order to be read as a form of entertainment among the palace dwellers, aristocrats and the people. A storyteller would read out the manuscript to the people complete with intonation as if he was telling a story. Besides being a form of entertainment, manuscripts were also produced as a source of reference for palace dwellers, literary aristocrats and ulama or religious scholars. (Siti Mariani SM Omar, 2012).

Digitization activities in National Library Malaysia Kuala Lumpur began around 1996 it an effort to preserve Malaysian collection and National Library (Perpustakaan Negara Malaysia) publications. The library providing access to these collection in digital format and online

specifically for Malaysian references or sources. In addition, digitization activities are also aimed at enhancing national knowledge resources in a digital format that currently stagnant. National Library of Malaysia encourage all libraries, scholars and researchers in the country to undertake digitization activities in an effort to increase and enrich their national knowledge in digital format.

However, until in the middle of 2019 there are only 30 selected manuscripts have been digitized except the Al-Qur'ans manuscript. Furthermore, these three years recently, the interest of researchers to study manuscripts especially the Qur'ans has been increased. This is found from the spreading working papers on Malay manuscripts. There was already busy crowd who were interested in exploring and attached physically with the manuscripts. Mean, to preserve these fragile materials must have a mechanism to manage and control of it.

Working Disciplines

Codicology approach

The discipline of the study of Codicology had emerged in the European country around the eighteenth century (Muhammad Isa Waley, 2018), especially in Germany (Massumeh Farhad, 2016). Codicology is the term referred to in the study of handmade books or manuscripts. Usually the case studied through this fields are firstly, regarding the physical form of the manuscript which is 'codex' as in the folds and stitches in the book. Secondly, the material for the surface for the writing text. Whether it's from animal skin or plants. Thirdly, the amount of folded papers and the condition of stitched. Fourth, writing equipment such as the type of indictment and various size of pen nibs. Fifth, page layout in manuscript. For Islamic manuscripts, the layout of the page is by using the predefined size of a ruler or in Arabic called mistar. Sixth, the variety of styles and forms of writing follows certain situations and places. Seventh, the study of Orthography is about the way the letters are used and are spelled. Eight, ornamental features that involve illumination and illustration activities. Ninth, the method of binding from simple boards to sensation leather with intricate filigree ornamentation (Francois Deroche, 2000).

Art History method

The function of ornamentation in Islamic art, in addition relating to the function of beauty, also purposely matters of faith which then extend to issues of style and enrichment as well as goals both geographically, dynamism, local influences, manufacturing techniques and details around the issue of motifs, composition and others, or in the sense of a distinctive design concept, where there is an aesthetic value that is also unique and becomes one of the benchmarks individually. Islamic ornaments in addition to showing the principal symptoms above, also contain functions to reconcile the visual senses, and pleasing to the eye.

For example, the symmetry values, entities, shapes, re-patterns, colour settings, diversity of themes, intertwining, complexity, accuracy, unity and perseverance in craftsmanship. Until art historians conclude, the beauty of each form of Islamic art, apart from being influenced by regional aspects, is also determined by three main factors, namely technique, material and motif, as we witness the phenomena of beauty and specificity in the regions of North, Central and West Africa, and then Turkey, Iran and Central Asia, as far as India, China and Southeast Asia (Ismail

and Lois Lamya al-Faruqi, 2003). Therefore, need to develop the mechanism to protect these fragile tangible heritage which lavish with special ornaments and beautiful meaning.

Preparing the metadata

The National Library Kuala Lumpur lists the al-Qur’ans collection starting from the fourth additional until ninth additional catalogue. Overall total numbers of the Qur’ans brought out for this research are 55. Almost more than 40 Qur’ans are in the good condition. This section describes the physical characteristics of the Al-Quran manuscript kept in the collection of the National Library, Kuala Lumpur. A total of 55 pieces of the Qur'an were examined, analysed, and recorded the physical information of the Qur'an (manuscript). The thing identified in reviewing the manuscript is the format or layout between the text and the decoration. The main structures to be considered are the size, width, and height of the Qur'an. The total number of pages is also carefully calculated. The frame text area is also measured in height and width. Likewise, the lines on each page are well documented. The physical structure of the Qur'an has been divided into four main parts, namely the first; the design structure of the Qur'an. Second; Text or sentence division area. Third; The number of lines of verse on the pages of the mushaf and the fourth; Number of pages or pages of the Qur'an.

Layout and design

Category: Page	Width	Height	Thick
Layout	min: 10 cm to max: 24 cm most: 19 cm to 22 cm	min: 15 cm to max: 37 cm most: 32 cm	min: 5 cm to max: 8.5 cm most: 5 cm to 8 cm

Category: Text	Width	Height
Area	11 cm to 13 cm	20 cm to 22 cm

Category: Lines per page	13 lines	15 lines
Total Manuscripts (MSS)	11 MSS	38 MSS

Category: Page	800 page	600 page	500 page	700 page	400 page	300 page
Total Manuscripts (MSS)	3 (MSS)	23 (MSS)	15 (MSS)	1 (MSS)	1 (MSS)	1 (MSS)

The structure and division of ornaments in the al-Qur’ans

The structure and division of design in the al-Qur’an from the National Library or Perpustakaan Negara Malaysia has been analysed based on the four main categories. The first category is the structure and framing of the al-Qur’ans. The structure and framing of the al-Qur’ans has been divided into two groups. The combination structure between a tendril with cupola and the combination structure between a curvature and triangular shape. The second category is the ornaments contained at the surah heading. The ornament has been detected at an illuminated pages and text pages area. The third category is the structure and design of the al-Qur’ans. The

design has been divided into two groups, the first group is the design in the verses or ayah markers with curvilinear, vesica shape and interlocking pattern.

The structure and decorative framing

a. Combination tendril with cupola shape

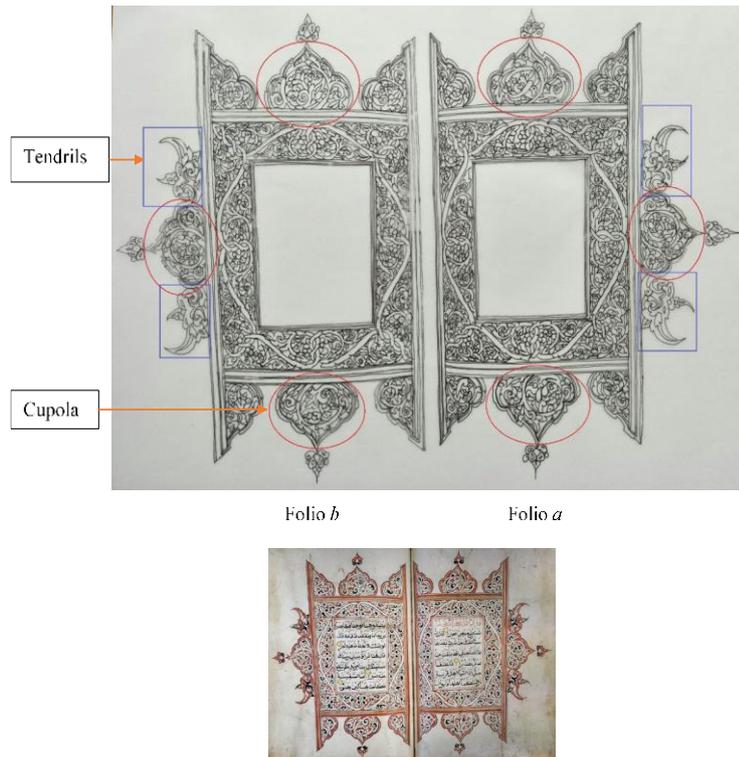


Figure 2.2.1 a: The outline drawing for the position of combination between tendril and cupola at the illuminated middle page of MSS 3566

From the figure 2.2.1 a above present the outline drawing for the position of combination between tendril and cupola at the illuminated middle page of MSS 3566. The combination pattern structure for this page appeared on folio a surah al-Kahfi starting from verse 75 – 76 and folio b surah al-Kahfi starting from verse 77 – 79 in the juzuk 16. There is a difference in the tendril decoration on the middle sheet of MSS 3566. The position of the tendril is only placed on the edge of the outer side frame. There is no tendril structure at the end of the cupola at the top of the frame and the bottom of the frame. It differs to the decorative sheets on the front of this MSS, where the tendril structure is found on the top of the frame, the bottom of the frame and on the edges of the outer side frame.

There seems to be no combination of tendril and cupola structures on this sheet. The condition of the pattern is very good and clear. There are six cupolas on both folio a and folio b. The two

cupola structures are at the bottom of the frame, and the other two are at the top of the frame. While the other two cupola structures are placed on the edge of the outer side frame. The cupola structure on the side of the outer side frame is flanked by a tendril pattern on the left and right sides of the cupola. The cupola is semi-circular in shape and the dome is rather pointed and slightly high. Meanwhile, the tendril structure that flanked the cupola also looks a little prominent. The outline of the tendril is colored red and thick.

b. Combination semi-circle, curvature, and triangle shape

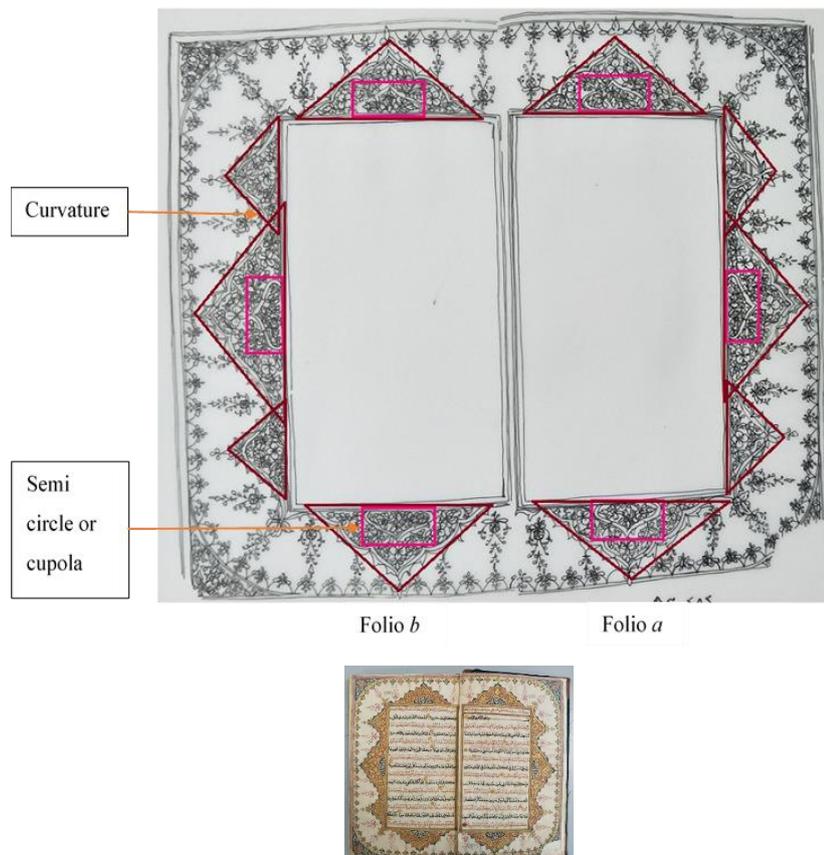


Figure 2.2.1 b: The outline drawing for the position of combination between semi-circle and triangle structure at the illuminated middle page of MSS 4136

From the figure 2.2.1 b above present about the outline drawing for the position of combination between semi-circle and triangle structure at the illuminated open page of MSS 3567. This combination structures available at folio a contained of surah al-Kahfi starting from verse 75 – 76 and folio b surah al-Kahfi starting from verse 77 – 79. This surah situated in the juzuk 16. The triangular structure is placed on the top of the frame, the bottom of the frame and on the edge of the outer side frame. However, on the inside of the decorative frame before the text frame, four triangular structures appear diagonally at each corner of the text frame. If these four triangular structures are combined, then it will form a combination of rhombus shape or in Malay society called as potong wajik motif. The triangular structures at folio a and folio b are placed on the top of the frame, the bottom of the frame and on the edges of the outer side frame. However, on the inside of the decorative frame before the text frame, four triangular structures

appear diagonally at each corner of the text frame. The position of this structure is placed at the top head of frame, bottom of the frame also on the edge of the outer side frame.

Surah heading

a. Illuminated page



Figure 2.2.2 a: MSS 3238 Ornamented title at illuminated open page

For figure 2.2.2 a MSS 3238, the title of the surah at the opening page written al-Fatihah on the left and right sides is decorated with a tendril pattern and leaf motif. Meanwhile, the character of the text al-Fatihah al-Makiyyah is written in a diagonal arrangement facing left with an estimated 40 degrees of inclined angle. Even at the end of the letters sin, ra and ta are gently bent. Then, at the end of the word makkiyyah is placed a tendril pattern. At the far end of the upper corner of the text. So that no empty space is left without decoration.



Figure 2.2.2 b: MSS 3596 Open page

From figure 2.2.2 b above show the decoration frame at surah header at the opening page for the MSS 3596 is divided into three frames. The main frame situated in the middle section is written

with the words al-Baqarah Madinah which is the name of the surah. Then the next two frames are on the left and right sides of the main frame. Inside the two frames are placed with red flower buds.

b. Text page

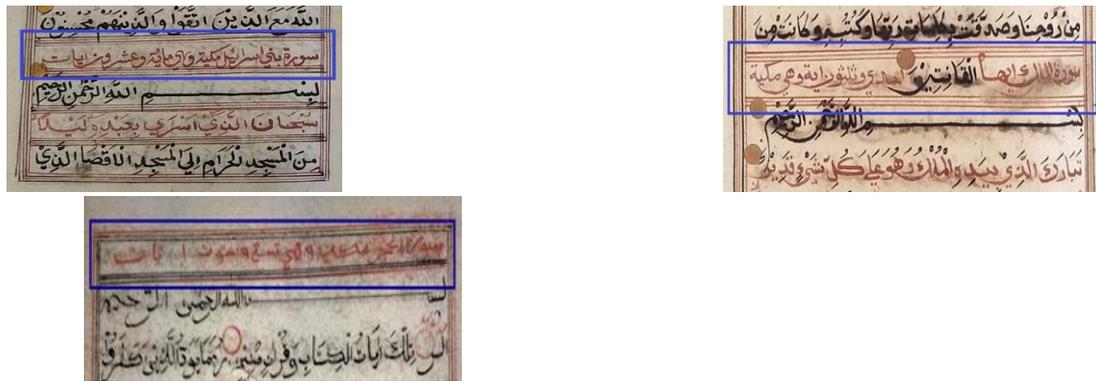


Figure 2.2.2 c: i-MSS 4777 Four lines, ii-MSS 4610 Three lines, iii-MSS 3265 Two lines

Figure 2.2.2 c above show the frame design on the surah title for the text pages is divided into three categories, the first is the surah title in the four-layer line frame. Secondly, the title of the surah in the three-layer line frame and the third is the title of the surah in the two-layer line frame. For the title of the surah in a four-layer lines per frame, three manuscripts have been identified using the frames of this category, namely MSS 136, MSS 4777, and MSS 4651. From the title of the surah of the three-layer lines per frame, five manuscripts have been found, namely MSS 137, MSS 4500, MSS 4503, MSS 4610, and MSS 4774. While the title of the surah of the two-layer lines per frame of twenty-three manuscripts has been found using this category. The category of structure is the most widely used as the frame for the surah title in the Qur'an.

The structure and division of design in the al-Qur'an

The structure and division of design in the al-Qur'an divide into two parts such as the verses or ayah markers with geometrical and curvilinear shape. For the division of the marginal design, examined the location of hizib and the juzuk in the al-Qur'an. One juzuk equal two hizib, meanwhile one hizib equal to four 4 maqra. Means to achieve one juzuk the reciter has to finish eight for to achieve one juzuk.

The verse of Ayah marker

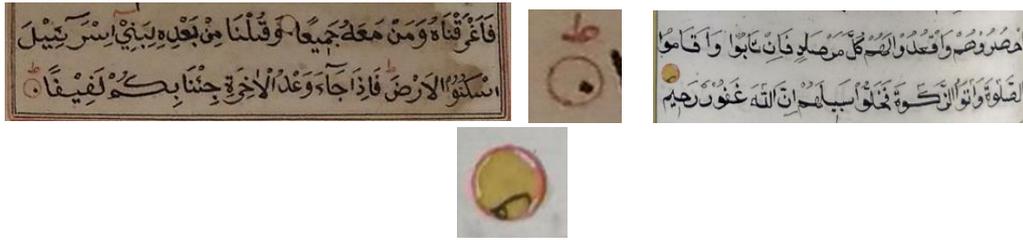


Figure 2.3.1 a: i- MSS 1960 and ii- MSS 3238 The verse or ayah marker with circle shape

Through the observation that has been carried out, from the fifty-five manuscripts of the Qur'ans, there are thirty-nine manuscripts applied the shape of a circle as a verse marker. (Figure 2.3.1 a)

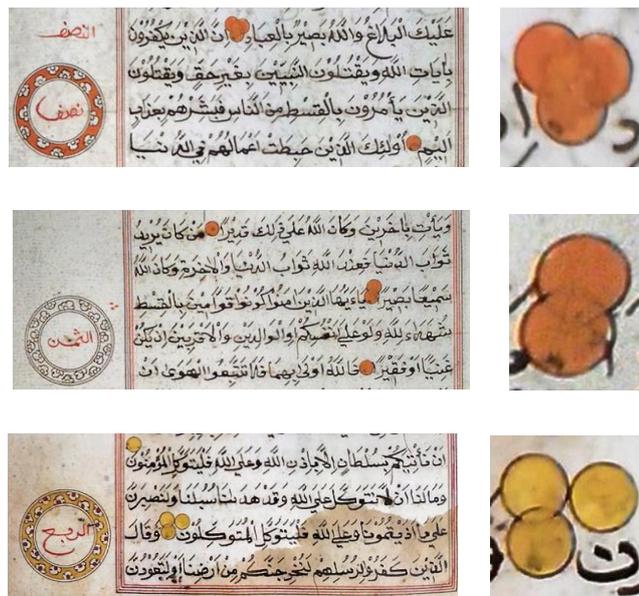


Figure 2.3.1 b: MSS 3567. The verse or ayah marker with vesica shape and interlocking pattern at maqra section: i- nisf section, ii- thumn section and iii- rubu' section.

From figure 2.3.1 b above explained about the verse's marker with vesica shape and interlocking pattern in the text. Based on the description of Vesica shape and interlocking pattern, it is found that these two features are found in the Qur'an manuscript. Four types of verse signs applied the Vesica shape and the interlocking pattern. First type is the two interlocking circles known as vesica shape, there are two manuscripts found using this vesica shape MSS 4778 and MSS 3567. Second type is three interlocking circles, there are two manuscripts found using the three locking circles namely MSS 3153 and MSS 3567. The purpose is to distinguish the division of the maqra section. The colour on the nisf mark is like the pigment from the turmeric plant. The colour sort

of reddish orange hue. Then, the yellow colour is for the section on rubu'. Means the MSS 3567 has a different colour for the three interlocking circles to mark the maqra division. For MSS 3567, two colours are found in the verse marks.

The marginal design

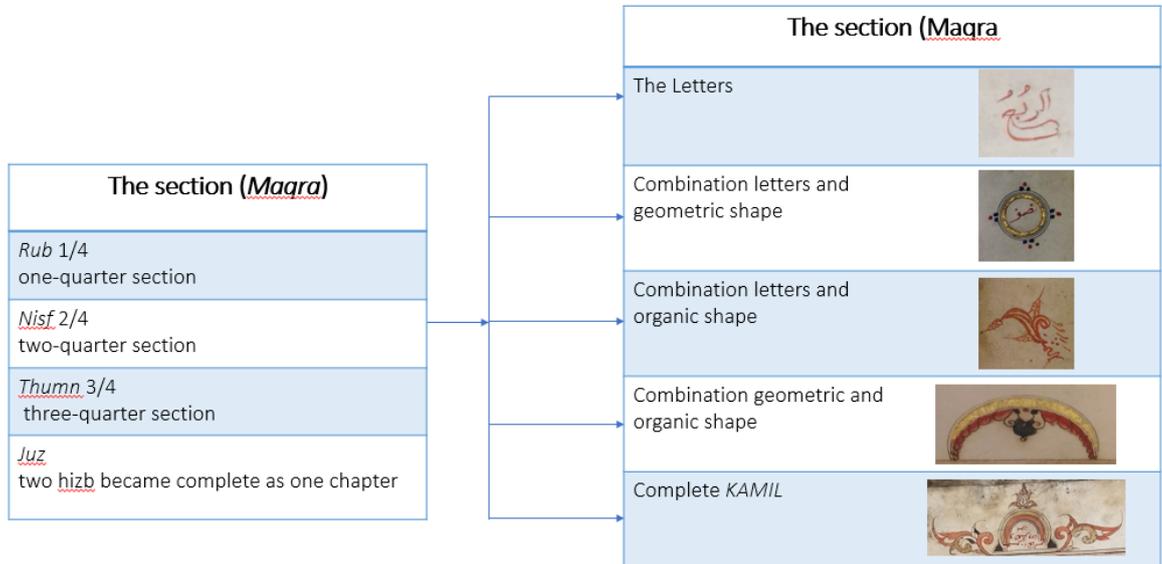


Table 2.3.2 a: The marginal design (hizb section)

This section is the most important in the Qur'an. It is the main department in generating the achievement of reciting the Qur'an. It has been explained that the Qur'an represents 30 chapters or juzuk. One juzuk refers to two hizib. In one hizib there are four maqra. While in each maqra there is a special unit called the unit of one quarter 1/4 (rub), two quarter 2/4 (nisf), three quarter 3/4 (thumn) and complete 1 hizib. Means to complete one juzuk the reciter has to go through two complete hizib which is equivalent to eight cycle of maqra.

Throughout from the research about these units, several types of shape combinations have been found in these maqra units. Five specific pattern combinations have been able to be collected namely the first; letter combinations, second; combinations of letters and geometric shapes, third; letter combinations with organic forms, fourth; a combination of geometric and organic shapes and the fifth; KAMIL's complete pattern. KAMIL is a pattern that represents all the elements that have been mentioned above, namely letters, geometric shapes and organics. (Table 2.3.2 a)

Distinctive ornament

During the research analysis, several distinctive ornament have been found in the Qur'an. There are special ornaments has been traced such as solid hanging ornament, floral calligraphy, medallion and persistence 'S' motif. Through the observation about these ornaments characteristic between Qur'an from Mamluk, Ottoman, Safavid or Mughal, there are specific derived from the local Malay district except for the 'S' motif available but with differ character.

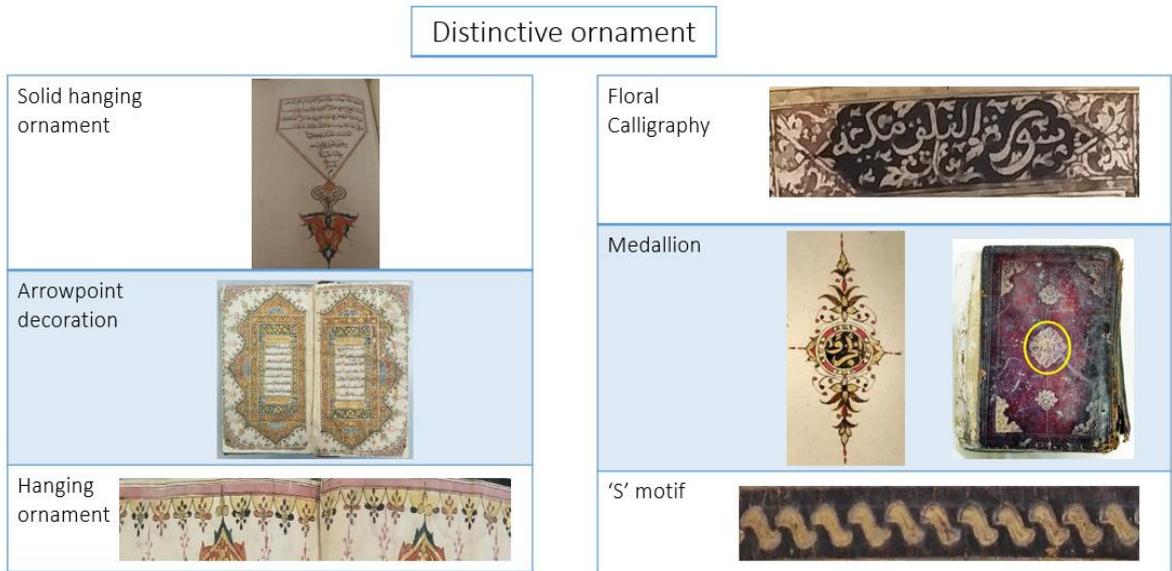


Table 2.3.2 b: The distinctive and special ornaments in the Qur'ans

Materials and tools

In general, the physical form of Malay manuscripts is the form of book which made from materials such paper, palm leaves, reed and animal skin. The pen used was from palm and bracken. Paper usually from European laid paper with watermark and dluwang material. Dluwang is a thin sheet made from daluang tree bark. Usually the writers, scribes or artist applied red and black ink. The text written in regular carbon black ink and red. The palette chosen by illuminators is limited to two shades red, blue, brown, yellow and a shades of gold.

Paper and binding

Qur'an binding is one of the important features of the Malay Qur'an manuscript in term of function and aesthetic. In this study, there are two main materials used in Malay Qur'an bindings which are leather and textile. The leather bindings were known for its tooled molded style which was related to the Islamic Turkish-Persian manuscript bindings tradition. The design of the cover come as a pair for the front and the back cover of the manuscripts with a spine in the middle and a flap on the edge of its back cover. The flap is used to protect the manuscript from the side and it's also could be used as a book mark.

In term of decorative design, the cover consists of a rectangular frame with multiple border designs, mirror image pairs of ornamental corner pieces, and a central medallion. The color of the leather is either maroon, black or dark brown. (Plate 2.5.1- a). This binding design is practical for the thick manuscripts. The paper used for this binding style were mainly the 18th – 19th century European paper with watermarks and stitched in Coptic style. This technique is where the folded folios were joined together in single stitch. The origin Coptic stitch binding was without covering spine, but the Malay Qur'an manuscripts have a spine cover. (Rosmahwati Ahmad Zakaria, 2014) (Plate 2.5.1- b)



plate 2.5.1- a from left: maroon cover MSS3590, black cover MSS 4651 and dark brown cover MSS 3153



Plate 2.5.1- b: Coptic stitch style binding

For the textile binding, the Qur'an manuscripts were smaller in size than the leather binding Qur'an manuscripts. MSS 4408 binding is a new cotton textile cover to replace the damaged original cover probably due to the water and fire as shown by the burnt mark. (plate 2.5.1- c) For the MSS 3265 still owned its original cotton covers where the fabric was paste on a thin piece of paper as a background layer as a cover but unfortunately with a damaged spine due to the damaged binding stitches and probably regular used by its owner. (plate 2.5.1- d)



plate 2.5.1- c: MSS 4408 The textile binding cover



plate 2.5.1- d: MSS 3265 The textile binding cover with damaged condition

Ink

Since the advent of Islam in the archipelago or the Malay world, Jawi writing began to develop in Malay society. Malay manuscript writing became a significant concern, especially when maritime cities such as Melaka and Aceh became knowledge centres. The palace played a role in making the Malay manuscript industry grow, especially in the religious and administrative fields. The production of Malay manuscripts consists of religious, economic, political, social, artistic, cultural, legal, and constitutional fields. Malay manuscripts usually were written in black ink. The Malay community uses black in almost all types of manuscripts. Red ink is mainly applied in copying verses in the Quran at the beginning of the chapters (surah) or particular letters or text. According to Wan Ali Wan Mamat (2012), the Malay community produces ink through various methods. The main ingredients for making the ink are plants and fruits. They processed these recipes according to the guidelines practice by Malay.

The material used in making Malay traditional ink are varied. The carbon sources are obtained from soot (combustion of kerosene oil, lamp black, charcoal, cobwebs, burnt rice, paper ash, bark of the merbau tree and senduduk seed. The adhesives used are cashew gum, latex of mangosteen and rambutan skin and black sticky rice. Black pepper, salt, virgin coconut oil,

palm vinegar are the additives. Palace and Islamic religious school play an important role in creating and writing Malay manuscripts by using traditional writing medium and tools. The performance of inks is influenced by its physical and chemical composition. (Rajabi Abdul Razak, 2016)

Design framework

Metadata is a collection of information. It is a foundational element used to transform data into an enterprise-wide asset. The data will organize, classify and labelled. Descriptive metadata means describes a resource for purposes such as discovery and identification. It can include elements such as title, abstract, author, and keywords. Structural metadata means indicates how compound objects are put together, for example, how pages are ordered to form chapters. Meanwhile administrative metadata provides information to help manage a resource, such as when and how it was created, file type and other technical information, and who can access it. Manuscript (abbreviated MS for singular and MSS for plural) was, traditionally, any document that is written by hand or, once practical typewriters became available, typewritten as opposed to being mechanically printed or reproduced in some indirect or automated way.

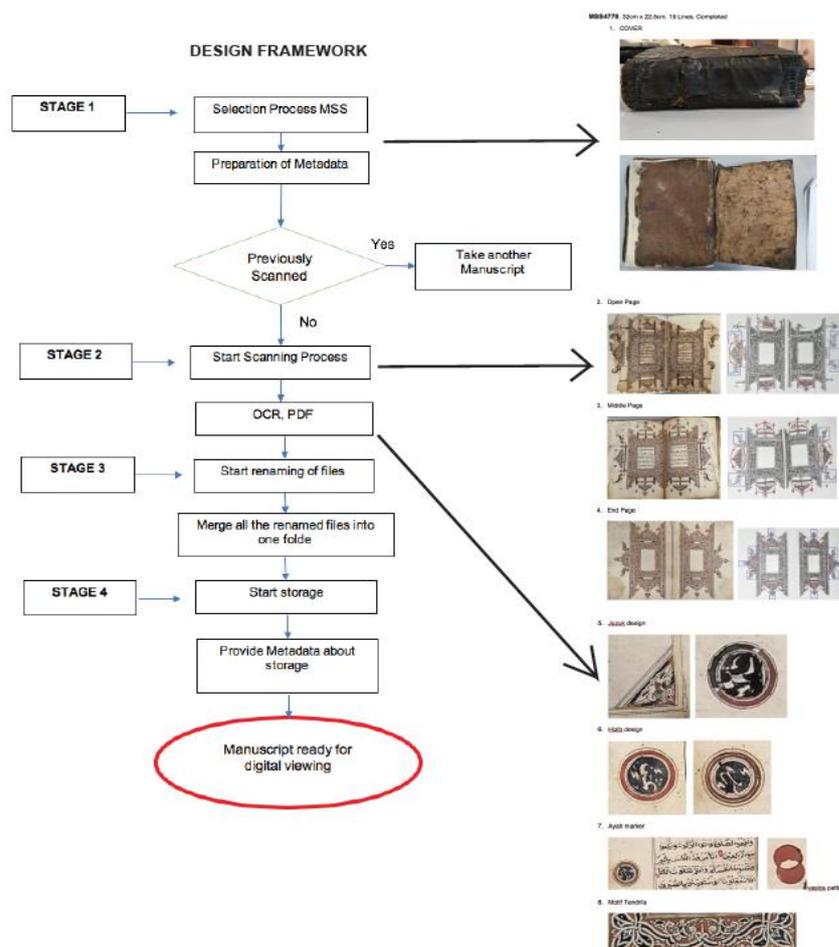


Diagram 2.6 a Design framework for the digitization process

The diagram 2.6 a above show the procedure of four main stages for digitization component of ornaments in the Qur’ans. Stage one is the selection of manuscript called MSS. Priority is given

to the Qur'an in the good condition and complete volume. Stage two is the scanning process. This process divided into two areas first physical structure of the Qur'ans such as layout, area of text and lines perpage. Second the structure and division of ornaments in the al-Qur'ans such as the decorative framing, surah heading and the marginal design. All these data information is stored in the form of portable document format and probably certain data image of text need to convert into a machine readable text format. Stage three is the process to renaming the files. Each of the data provided identical tag. All these identical tag need to organize to organize by the specific cluster. The last stage, stage four provide the metadata about storage. All the information and captions are referring to the codicology approach and art history method. Later template or model manuscripts ready for digital viewing. The section also requires the cooperation from the Malay manuscript department from National Library Kuala Lumpur to determine other parts of the services section can be supplied with this digitized metadata.

Conclusion

With the advancement of information technology, digitization promises as a one of the best and relevant system in this era for documentation and preserving manuscripts. Hopefully, this model will be provide guidance and understanding about the physical decoration of the manuscripts also exposed, improved and preserved the vocabularies of ornament and design from the Malay and archipelago.

There is an interrelation between the decorative components with the elements of traditional Malay art of the archipelago. The most prominent and frequently found pattern structure is the tendril structure. It is almost visible in all units in the Qur'ans from National Library Kuala Lumpur. From these five combinations of special patterns that are attached to the separating section or maqra al-Qur'an Nusantara is a contributor to the treasury of the Malay world. Need a vigorous endeavour to documenting the ornaments in form of digitize, because these manuscripts are deteriorating day by day to various reasons such as environmental pollution, physical handling, microbiological agents and physic-chemical reaction. In the past five years, the interest of researchers to study manuscripts and especially the Qur'an has increased. Therefore, this research is the first step to digitize al-Qur'an manuscripts in the field of science codicology approach art history method which focus on the physical layout and special features ornament called as ragamhias in the Qur'an from the National Library Kuala Lumpur.

Briefly the significance for this research covered into three sections. The biggest contribution for National Library Kuala Lumpur is become major part of references to an expertise in the field of art history, codicology, museology and manuscript archives. Secondly, become a center of learning and providing guidance to craftsman, artists and art apprenticeship. Thirdly, develop and establish the system especially Malay art desoration vocabularies for art curriculum and education.

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