

## ANTHROPOMETRY OVERVIEW OF THE COLLECTION DISPLAY AT THE BATIK GALLERY, TEXTILE MUSEUM, JAKARTA

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### ABSTRACT

*Textile Museum is a cultural heritage that exhibits and collects Indonesian textile collections from traditional to contemporary collections. Textile Museum has many collections that can be put on display in its building. One of them is the Batik Gallery which stores and exhibits Batik fabrics from various regions in Indonesia. For visitors, the Batik Gallery is a place for recreation and also gives knowledge about Indonesian batik. When designing the Batik, comfort must be taken into account so that it will attract more visitors, especially on the display of its collection. The case study discussed is how to understand the display layout at Batik Gallery by considering anthropometry and visitor comfort. The purpose of the anthropometric studies on the collection display is to consider the literature data with its field data on its size and arrangement so that the application of anthropometric principles can be implemented properly and correctly. This research combines two methods, namely qualitative and quantitative methods. These methods also include the combination of numeric data, text, and images to cover the description through a descriptive approach and layout of the display. The scope to be discussed is limited to the collection displays at the Batik Gallery. Several displays are suitable to anthropometric, but in terms of their placement, some displays are not in line with the anthropometric studies. It is hoped that this research can be useful for designers in a way that they can design and arrange collection displays that are comfortable and follow anthropometry.*

**Keywords:** Anthropometry, Batik Gallery, Collection Displays, Textile Museum

### 1.PREFACE

The museum is one of the places that plays an important role in maintaining, developing, and preserving the cultural heritage of Indonesia. According to Kotler's view [1], a museum is defined as an educational and aesthetic purpose institution that maintains and owns a movable or immovable object. The museum also aims to provide education, information, and recreation so that the Indonesian people know and understand our traditional wastra culture better.

In the process of educating and informing material or cultural heritage, designers need to understand visual communication when displaying a collection because it is intended for visitors or observers. In designing an installation or display collection, the designer must be able to consider the anthropometry and the included visual elements [2].

In consequence, the designer must consider anthropometry in designing a collection display to produce a better and more appropriate design. The purpose of the anthropometric study on the collection display is to consider the literature data with its field data on its size and arrangement so that the application of anthropometric principles can be applied properly and correctly.

In planning and designing a good museum, it cannot be separated from the principles of anthropometry to uphold the comfort of visitors. According to Stevenson (1980) and Nurmianto [3], Anthropometry is a collection of numerical data that has some relevancies with the physical characteristics of the human body such as size, shape, strength and its application to deal with design problems. Julius Panero and Martin Zelnik also said that anthropometry is a science that explains the differences in the size of each person by studying human dimensions [4].

### Anthropometry

Anthropometry plays an important role in designing a space, including a museum. Placement and installation of a good collection display must consider the principles of anthropometry.

Anthropometric principles are obtained from data on body posture, observer's eye height, visibility, and observer's position. It is necessary considered so that the exhibition arrangement can be observed and enjoyed comfortably [2].

Not only that, the application of collection displays or exhibitions that pays attention to anthropometry also aims to establish good interaction between visitors and the objects in the collection or exhibits around them. Collection displays contained in museums are usually named vitrine. Vitrine is a display cabinet that has a function as a place to put objects or collections which will be exhibited to visitors [5]. Muhammad Fauzi said that there are several stages in making a vitrine design, one of which is the anthropometric aspect which aims to achieve comfort for visitors [6].

### **Batik Gallery, Textile Museum**

In this study, the author focuses on the Batik Gallery at the Textile Museum as the scope that will be discussed. The Jakarta Textile Museum is one of the most complete museums in Indonesia that presents various kinds of textiles from remote parts of the archipelago to abroad [7]. In its classification, Textile Museum is an A-type cultural heritage managed by the government.

The facilities at the Textile Museum are quite complete, one of which is the Batik Gallery. Batik Gallery is a permanent exhibition building located in the Textile Museum which displays and exhibits traditional Indonesian batik to contemporary batik. Batik collections have different sizes and materials and are large enough so that the display of the collection must also be able to adjust to the collection and interior of the room from the Batik Gallery.

Based on research on the application of ergonomics in furniture design conducted by Bambang KK, Ade F., and Oktavianus N. [8], designs that do not use anthropometric principles will produce designs that are not good, comfortable, and efficient towards visitors.

This research was conducted by comparing literature data on anthropometry with data from the results of a field survey at the Textile Museum to examine more deeply whether the collection displays in the Batik Gallery have followed the standards and met the requirements of good and correct anthropometric rules in designing a museum.

## **2. RESEARCH METHODS**

The research method used in scientific writing uses mixed research methods. Mixed methods are research methods that combine two research methods between qualitative methods and quantitative methods on a study to obtain more valid, reliable, objective, and comprehensive data [9].

This study aims to review more deeply anthropometry in the collection display by comparing literature data with data in the field. The research subjects that become the primary data of this research are the Museum Management and the parties related to the museum. In addition, there are also secondary data obtained and processed from books, journals, and the internet related to discussions and museums.

Data collection techniques carried out by the author consist of:

### **1. Literature Study**

In this design, a literature study was carried out by looking for various data to support the research, namely using reference books, interior and architectural journals, and searching through the internet.

### **2. Observation**

The observations made at the Batik Gallery are to obtain data in the form of sizes and other data.

### **3. Documentation**

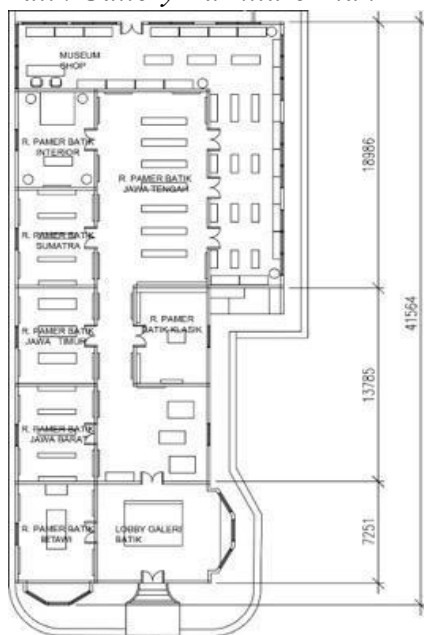
Documentation in the form of pictures and photos of the interior as well as collection displays at the Batik Gallery of Textile Museum, Jakarta is to complement and clarify the research. The data, obtained above, is then analyzed descriptively by describing the data in the form of regular sentences so that it is easy to understand. The author compares the literature data with the field data systematically to get a descriptive conclusion regarding the anthropometric review on the collection display at the Batik Gallery, Textile Museum, Jakarta.

### 3. FINDINGS AND DISCUSSIONS

#### Batik Gallery Collection Display Layout

**Figure 1**

*Batik Gallery Furniture Plan*

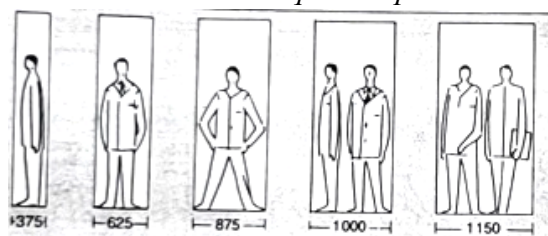


**Source:** Aurellia Evelyn, 2021

Overall, the layout of the collection display at the Batik Museum Textile Gallery is pretty good in terms of display placement which is neatly arranged. It is just that in some spaces there is a display placement distance that is quite narrow. According to Ernst Neufert [10], the minimum distance between two people with a circulation bigger than 10% of the width is 100 cm to 115 cm.

**Figure 2**

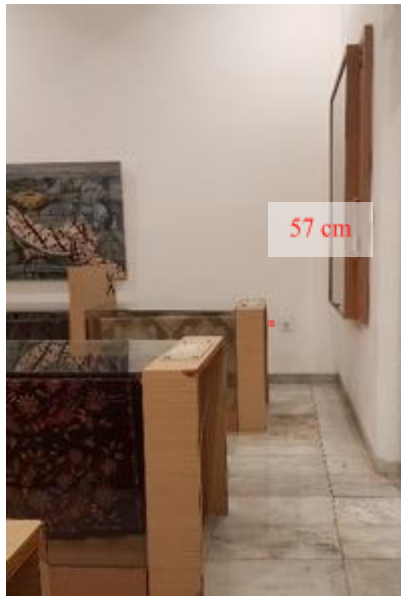
*Minimum Distance Required Space*



**Source:** Ernst Neufert, 1992

**Figure 3**

*Distance Between Displays in East Java Exhibition Room*

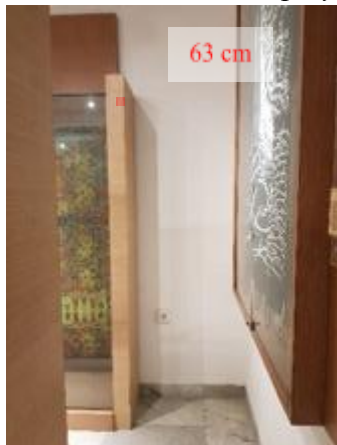


**Source:** Aurellia Evelyn, 2021

The distance between the displays in the Sumatra exhibition hall (picture 4) and the East Java exhibition room (picture 3) is not wide enough so that it cannot be passed by two people at once. It can be concluded from these data, the distance for placing displays in the exhibition halls of Sumatra and East Java is not in accordance with the minimum size of human movement needs.

**Figure 4**

*Distance Between Displays in Sumatra Exhibition Hall*



**Source:** Aurellia Evelyn, 2021

**Figure 5**

*Distance Between Displays in the Central Java Exhibition Room*



**Source:** Aurellia Evelyn, 2021

**Figure 6**

*Distance Between Displays in Classic Exhibition Hall*



**Source:** Aurellia Evelyn, 2021

**Figure 7**

*Distance Between Displays in Betawi Exhibition Hall*

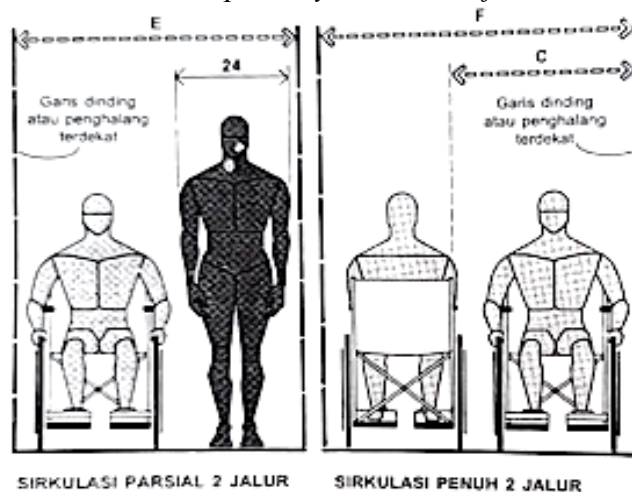


**Source:** Aurellia Evelyn, 2021

Based on literature data, the minimum circulation size for disabled people to pass is 91.4 cm (C). From these data, it can be concluded that several exhibition spaces at the Batik Gallery, such as the Central Java exhibition room, the Betawi exhibition room, and the classical exhibition room, have already had a good enough distance between displays so that two people can pass by as well as those with disabilities.

**Figure 8**

*Circulation Anthropometry Guidelines for Disabled*



|   | in  | cm    |
|---|-----|-------|
| A | 30  | 76,2  |
| B | 24  | 61,0  |
| C | 36  | 91,4  |
| D | 120 | 304,8 |
| E | 54  | 137,2 |
| F | 60  | 152,4 |

**Source:** Panero, J. & Zelnik, M, 1979

### Anthropometry Collection Displays

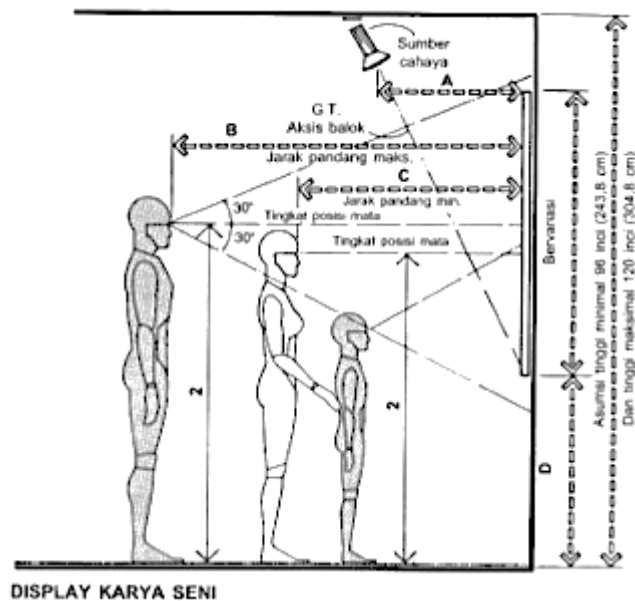
The collection display at the Batik Gallery consists of several types, such as wall vitrine and middle vitrine. Each collection display also has different sizes according to its need.

Anthropometry is visible from the distance of observation of the collection display or an object. The most important thing in designing or placing a display is to pay attention to the general eye height of the observer, as shown in Figure 9.

In addition, from the image below, it can also be seen which distance allows the observer to see the details of the object. However, in an anthropometric review on the display of the Batik Gallery collection, the observation distance will be observed at a distance of 76.2 cm (C) to 152.4 cm (B). According to Ernst and Peter Neufert [11], the ideal height for collection displays is 75 cm to 90 cm.

**Figure 9**

*Guidelines for Observer Distance to Collection Displays*



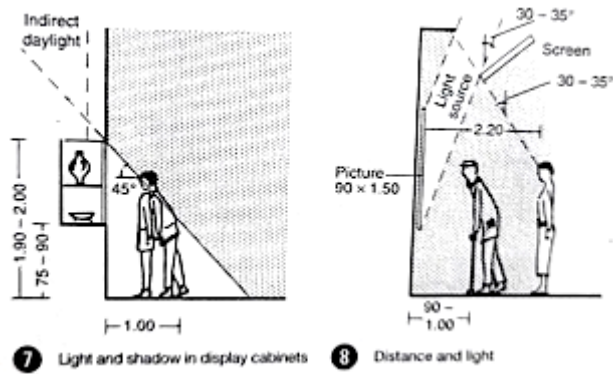
|   | in    | cm          |
|---|-------|-------------|
| A | 16-24 | 40.6-61.0   |
| B | 60-78 | 152.4-198.1 |
| C | 30-42 | 76.2-106.7  |
| D | 36    | 91.4        |
| E | 20-24 | 50.8-61.0   |
| F | 51    | 129.5       |
| G | 33    | 83.8        |
| H | 18    | 45.7        |
| I | 40-44 | 101.6-111.8 |
| J | 80-88 | 203.2-223.5 |

(Source: Panero, J. & Zelnik, M, 1980)

**Figure 10**

*Collection Display Height Guidelines*





Source: Neufert P., 2004

**Figure 11**

*Collection Display 1 at the Central Java Exhibition Room*



Source: Aurellia Evelyn, 2021

From the collection display 1, the observation distance ranges from 83.7 cm to 283.7 cm. When compared with the literature data, it is pretty good because the minimum viewing distance ranges from 76.2 cm to 152.4 cm. However, to see the collection information and object details, it must be seen from a closer distance because the size of the writing is too small. Meanwhile, the height of the display position has been placed quite well following the direction of the eye and literature, as a result, visitors can feel comfortable.

**Figure 12**

*Collection Display 2 at the Central Java Exhibition Room*

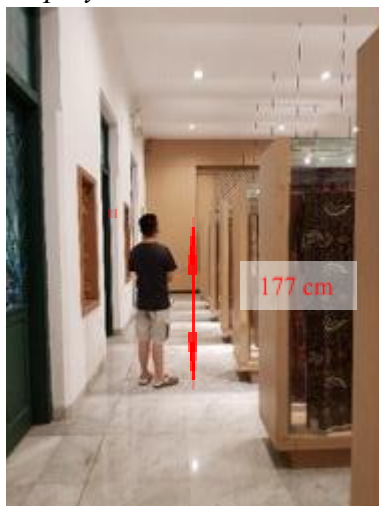




**Source:** Aurellia Evelyn, 2021

**Figure 13**

*Display Size 2 with Observer Height*



**Source:** Aurellia Evelyn, 2021

In the Central Java exhibition hall, the distance between the center displays is quite wide, the distance is approximately 95 cm to 110 cm. Observer distance on display collection 2 obtained is 76.2 cm to 100 cm. If it is reviewed with the minimum distance of the observer to the recommended display, then with the distance of the observer on the display collection 2, the observer is less able to see the object as a whole comfortably so that if you want to see the object in a whole, the observer must bow his/her head. As for the height of the display and information, it is pretty good and comfortable.

**Figure 14**

*Collection Display 3 at the Sumatra Exhibition Room*



**Source:** Aurellia Evelyn, 2021

The collection displays in the Sumatra exhibition hall are more or less similar to the collection displays in the Central Java exhibition hall. The distance between collection display 3 is not too far, which is 100 cm so the distance from the observer to a good display is 76.2 cm to 90 cm.

**Figure 15**

*Collection Display 4 at the East Java Exhibition Room*



**Source:** Aurellia Evelyn, 2021

In the East Java exhibition hall, objects can be seen from above. From the display height of 108 cm, the viewing distance can be considered quite good in terms of the distance between the observer and the display and the size of the anthropometry.

**Figure 16**

*Collection Display 5 in the Classic Batik Exhibition Room*



**Source:** Aurellia Evelyn, 2021)

The height of the collection display in the classic batik exhibition room is fairly good because the display height is 83 cm from the floor which follows anthropometric guidelines so that when viewing cloth objects, there is no need to bend down a lot.

#### 4. CONCLUSIONS

Based on the results of the analysis on the discussion and comparison with literature studies, it can be concluded that overall the height of the collection display is quite good and comfortable. The average distance of the observer to the collection display is 76.2 cm to 100 cm. The lowest height of the object on display in the vitrine is at an elevation of 16 cm from the floor, namely on the collection display 4 in the Sumatra exhibition room.

Although the height of the object is pretty low, it is still comfortable because the position of the view is from above. While the elevation of the object that can make the observer feel comfortable is at an elevation of 83 cm because the observer can see the object as a whole without having to look down more.

However, in terms of the layout between collection displays, there are still distances that have not applied good anthropometric guidelines, consequently, some observers' viewing distances with displays are less comfortable.

In this study, the author is still aware that there are still shortcomings in the writing and discussion of this paper. The author hopes that this research can be useful and provide inspiration for everyone who reads it. The author also hopes that this research can be used as an evaluation material and further developed in the preparation of further writings.

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