

# RATTAN POTENTIAL AS ENVIRONMENTALLY FRIENDLY MATERIAL FOR SEATING FURNITURE

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## ABSTRACT

*Rattan is a very well-known environmentally friendly material in seating furniture, but the facts, not all of rattan material can be used for seating furniture. Rattan is also a sustainable product that can be used as a solid wood substitute. Additionally, with rattan's high commercial value both on the national and international markets, Indonesia as the largest rattan producer worldwide gained a high export opportunity. Indonesia is ranked third in global rattan exports and has successfully penetrated export markets in various countries across continents, especially in Europe. Therefore, this research aims to determine the characteristics, benefits, and functions of rattan from various type of rattan that can be use as materials for seating furniture in Indonesia, especially Cirebon in Mantera Rattan Manufacture so that furniture designers can find out which type of rattan that can be used for seating furniture. The research method used was qualitative by literature studies from various source and observing Mantera Rattan. It can be concluded that rattan is a sustainable material that has great potential in designing furniture, especially seating furniture, but not all types of rattan can be used as material in seating furniture due to the dependence on the thickness and strength of each type of rattan.*

**Keywords:** Rattan, furniture, design, types

## 1. PREFACE

Rattan is a very popular material in nowadays furniture industry which has potential as a sustainable material. Rattan is a natural fiber that comes from palm plants that grow in tropical forest and one of the non timber forest products that is known widely by the public. In a research, it was revealed that seating furniture that uses rattan as material has its uniqueness from the rattan natural touch.

However, there are several challenges that need to be handled in using rattan material as seating furniture. One of them is the type of rattan that will be used for seating furniture, because not all types and species of rattan can be used as material in seating furniture design due to the dependence on the thickness and strength of each type of rattan. So, this research aims to identify and analyze the potential of Rattan as an environmentally friendly material in making seating furniture and also identify of rattan types and species that can be use as material in seating furniture design based on its strength, thickness, and durability.

## 2. RESEARCH METHOD

The research method used was qualitative by collecting data from literature studies from various sources that can be found from another journals, news, books, and another media. Also this research data comes from visiting Mantera Rattan manufacture which was carried out on May 19<sup>th</sup> 2023 to collect data from experience, observe and feel the texture from each species of Rattan that displayed in Mantera Rattan Manufacture.

### 3. RESULT AND DISCUSSION

According to Dianti et al. (2019) in their journal “Pemanfaatan Rotan Sebagai Bahan Kerajinan Di Desa Paoh Concong Kecamatan Simpang Hulu Kabupaten Ketapang”, rattan has been a long time used as raw material in the furniture industry. Apart from the aesthetic value, rattan also has the potential to be an environmentally friendly material, because rattan is a plant that can be cultivated and can be fully grown and harvested within only two years, compared to some solid wood that needs 20 until 30 years to be grown and harvested. Therefore, this reason makes rattan a completely sustainable and environmentally friendly material (Rahmadinna, 2020). Based on Alacasa ID articles from Rahmadinna (2020), furniture that uses rattan as base material is easy to maintain, just using a soft cloth and regular soap to clean rattan furniture. Besides that, Rattan itself is also strong, firm, weatherproof, anti-termite, and light so rattan can be a material choice to make a seating furniture even for outdoor.

Every rattan material has a different function due to its thickness, strength, and durability. In Indonesia itself, there are eight rattan genera consisting of approximately 300 to 350 types that spread around Indonesia, from Sumatra, Kalimantan, Java, and others. This statement means, Indonesia has a lot of rattan that can be use, but not all of rattan can be used as seating furniture design because in designing seating furniture we must to see the durability of the rattan types to make a strong and a firm chairs, so everyone can sit on a rattan chair. So from the observation and the experience through Mantera Ratan, Cirebon, there are some rattan types that are identified to be used as furniture base and design.

#### **Rattan from Indonesia**

Indonesia is the largest rattan producing country in the world, it is estimated that 80% rattan materials worldwide are produced by Indonesia, the rest produced by other countries such as: the Philippines, Vietnam, and other countries in Asia. So these are some types of rattan that identified produced by Indonesia and used for seating furniture

#### **Rattan Used for Making Main Frame of Furniture**

So there are some basic rattan that used as furniture main frame, like Rattan Batang (diameter 16mm-60mm), Rattan Semambo (diameter 16mm-34mm), Rattan Tohiti (diameter 14mm-25mm), Rattan Suti (diameter 20mm-50mm), Rattan Manao (diameter 18mm-60mm), this rattan has been identified can be use as main frame of furniture because it thickness and durability, and it means the diameter minimum to use as main frame of furniture is 16mm. But for making chairs, surely to pay attention to the construction and the frame of chair feet. It must be strong and firm enough to be seating furniture, and from the real case, to make a strong and firm chair it must be minimum 30mm for the chair feet, so the chair does not bend to the opposite directions which can cause the chair to break.

**Figure 1**

*Rattan Semambo, Diameter 16mm-34mm*



**Figure 2**

*Polished Rattan Batang, Diameter 16mm-60mm*



**Figure 3**

*Polished Manao and Manao Rattan, Diameter 16mm-60mm*

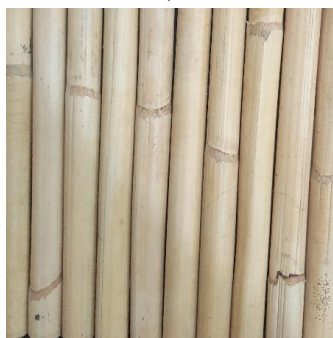


### Rattan Used for Supporting the Main Frame

There's also rattan that is used for the main frame which is also important in seating chair construction so the chair is not easily to break. One of the rattan types that is included in this category is Rotan Mawi (diameter 16mm-28mm).

**Figure 4**

*Rattan Mawi, Diameter 16mm-28mm*



### Rattan Used for Woven Material

Some seating furniture uses woven rattan as the material that also has aesthetic value, basically it uses the skin of rattan and it can be sourced from any type of rattans.

### Rattan Used for Binding Furniture

Besides being woven material that can be used for furniture decorations, the skins of rattan are also used for binding the furniture construction to hide it and also to make it more tied. This makes the furniture more firm. One of rattan types that can be used is Rattan Sega, which the outside of this rattan can be used for rattan rope that is used for binding and the core use for decoration and weaving material.

### Figure 5

*Rattan Sega, Diameter 4mm-14mm*



### Rattan Used for Making Furniture Decoration

Last, there are some rattan that are used as the decoration because the durability is not eligible to be used for the main frame. The rattan type included in this category is Rotan Kertas (diameter 4mm-16mm), Rotan Noko (diameter 18-20mm), etc.

### Figure 6

*Rattan Noko, Diameter 18mm-20mm*



### Implementation to furniture design

The design of the chair that was analyzed has a natural shape and has many curves. This kind of design is easier if it is made of rattan, and Manao rattan is the rattan type that is used in this chair.

**Figure 7**

*Dancé, Bar Stool*



The rattan type that is used in this bar stool has 3cm diameter, using polished manao rattan and natural finished to make the rattan texture stay but has smooth surface. Also use smaller diameter rattan that used as a dowel, almost all of rattan types has around 4-8mm diameter can be used as dowel. Also use smaller diameter around 5mm-1mm as seat construction.

**Figure 8**

*Dancé, Bar Stool – Details 1*



**Figure 9**

*Dancé, Bar Stool – Details 2*



**Figure 10**

*Dancé, Bar Stool*



#### **4. CONCLUSIONS AND RECOMMENDATIONS**

It can be concluded that rattan is a material that has great potential in designing furniture, especially seating furniture. Indonesia is the largest rattan producing country in the world, it is estimated that 80% rattan materials worldwide are produced by Indonesia, it means not all types of rattan can be used as material in designing seating furniture due to the thickness, strength, and durability of each type of rattan. It would be better if the types of rattan that can be used as material in designing seating furniture should be more publicized so that furniture designers can know about this, not only for experts but also for designers who are new to the design world.

Writer's recommendations to designers that wanted to use rattan as based material for furniture or craft, designers must know which rattan types that can be use as the foundation of the chair due to its durability, strength, and the texture. If the designers don't know about rattan, designers should consult with the experts that are certified or experienced professionals that knows a lot about rattan, so the design of the furniture can be evaluated whether it can be made or not.

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