Application of ABC Analysis to Control Inventory and Material Excesses of the Winston Rattan High back Armchair at PT Kharisma Rotan Mandiri

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Abstract

PT. Kharisma Rotan Mandiri is a rattan furniture manufacturer and exporter company established in 1998 that produces various of furniture models and home decorations made of rattan, wood, and iron alloys. Based on direct observations made by the author and discussions with the company, there is a buildup of unused materials for the Winston Rattan High back Armchair chair in the cutting building. Based on discussions that have been carried out by the author with the company, it was found that PT Kharisma Rattan Mandiri has not managed material inventory efficiently so that there is often a buildup of residual materials that hinder operator performance and harm the company's investment costs. The Winston Rattan High Back Armchair chair was chosen as the object of research because it is a product that is included in the push product (a product with high demand) so the company needs to maintain the availability of material stocks. Inventory control is needed in the management of materials Winston Rattan High back Armchair as an effort to maintain optimal availability of materials with the aim of stacking the remaining materials which harms the company's investment costs and hinders the work of production operators to be reduced. ABC analysis is one of the methods used in inventory planning and control. The focus of the ABC Analysis is to group inventory based on the cumulative amount of usage and investment value of each existing inventory. This grouping is carried out to determine control priorities and assist operators in facilitating the diversification of inventory records. The conclusion of this study is that the stock of Winston Rattan High back Armchair are medium moving because most of the the material for the Winston Rattan High back Armchair, categorized as B, namely eight items. Category A has the least number of materials, namely as many as 2 items. Through the analysis of the investment value, it is known that many material items in group C have low investment values. So that the purchase can be reduced or replaced with other materials and can reduce the risk of causing a high risk of accumulation of residual materials and large investment costs.

Keywords
ABC Analysis; Excesses Material; Inventory Control Inventory Management; Winston Rattan High back Armchair.

1. Introduction
Indonesia is a country that has extraordinary potential with a wealth of abundant natural resources, both renewable resources and unrenewable resources. As a country that has the third largest natural tropical forest in the world, Indonesia is rich in biological natural resources (Trade Policy Assessment and Development Agency, 2016). One of the Non-Timber Forest Products (HBHK) which is a superior product and is a renewable natural resource is rattan. However, over the past five years Indonesia has experienced four times the deficit in the trade balance of rattan and rattan-based products. This is a yellow light that indicates the decline of the rattan processing industry in Indonesia

(Ardiyanti, 2016). Therefore, Indonesian rattan companies need to apply appropriate methods in production management to create a competitive advantage to face the competition of the international rattan industry market and produce quality products to attract consumers and meet the interests of the global market. One of them is by planning inventory control for rattan material needs to be used as an important strategy in increasing the effectiveness and efficiency of material inventory (Nababan, 2019). One of the Indonesian companies engaged in the rattan industry is PT Kharisma Rattan Mandiri, Sukoharjo. Based on direct observations made by the author and discussions with the company, there is a buildup of unused materials for the Winston Rattan High back Armchair chair in the cutting building. Based on discussions that have been carried out by the author with the company, it was found that PT Kharisma Rattan Mandiri has not managed material inventory efficiently so that there is often a buildup of residual materials that hinder operator performance and harm the company's investment costs. In addition, in procuring materials, the company does not yet have regular recording and grouping of material inventory as a tool in diversifying inventory.

The Winston Rattan High Back Armchair chair was chosen as the object of research because it is a product that is included in the push product (a product with high demand) so the company needs to maintain the availability of material stocks. Inventory control is needed in the management of materials Winston Rattan High back Armchair as an effort to maintain optimal availability of materials with the aim of stacking the remaining materials which harms the company's investment costs and hinders the work of production operators to be reduced. Through Figure 1, the accumulation of residual materials that occurs in the cutting building is quite consuming for the operator's workspace.

Figure 1. The Accumulation of Remaining Materials for Winston Rattan High back Armchair in the production room of PT Kharisma Rattan Mandiri

Researchers are interested in using the ABC Analysis method as a research methodology because it can be used to overcome the problem of the accumulation of residual materials for the Winston Rattan High back Armchair chair at PT Kharisma Ratan Mandiri. ABC analysis is one of the methods used in inventory planning and control. The focus of the ABC Analysis is to group inventory based on the cumulative amount of usage and investment value of each existing inventory. This grouping is carried out to determine control priorities and assist operators in facilitating the diversification of inventory records.

1.1 Objectives

The purpose of this study is to classify Winston Rattan High back Armchair materials into categories A, B, C based on investment value and usage value and recommend a list of Winston Rattan High back Armchair material items that

should be the company's top priority in handling inventory problems by considering critical values. Provided by three stakeholders.

2. Literature Review

Inventory control is the activity which organizes the availability of items to the customers. Its co-ordinates the purchasing, manufacturing, and distribution functions to meet the marketing needs. This role includes the supply of current sales items, new products, consumables, spare parts, obscelent items and all other supplies (Wild, 2002).

The objective of the work of stock control is to contribute to the walfare of the whole organization. The logistic operation must aim to 'contribute to profit by servicing the marketing and financial needs of the company'. The aim is not to always make all items available, as this may well be detrimental to the finances of the company. The normal role for the stock control is to meet the required demand at a minimum cost. The purpose of the inventory control function in supporting the business is to optimize the three targets: customer service, inventory costs, and operating cost. Optimizing the balance of these three objectives is the focus of stock control. The better balancing the greater the profits provided for the company (Wild, 2002).

ABC analysis is a method of classifying goods based on value ratings from highest to lowest values and is divided into 3 large groups called groups A, B and C (Wahyuni, 2015). ABC analysis divides inventory into three classes based on the amount of value produced by the inventory (Schroeder, 2010). This principle teaches to focus inventory control on types of inventories that are of high value or critical rather than those that are low or trivial. The ABC analysis is a categorization based on turnover values as presented in Figure 2 in some cases, a further classification (D) is used to include a stock of items with a lower turnover value in larger quantities.

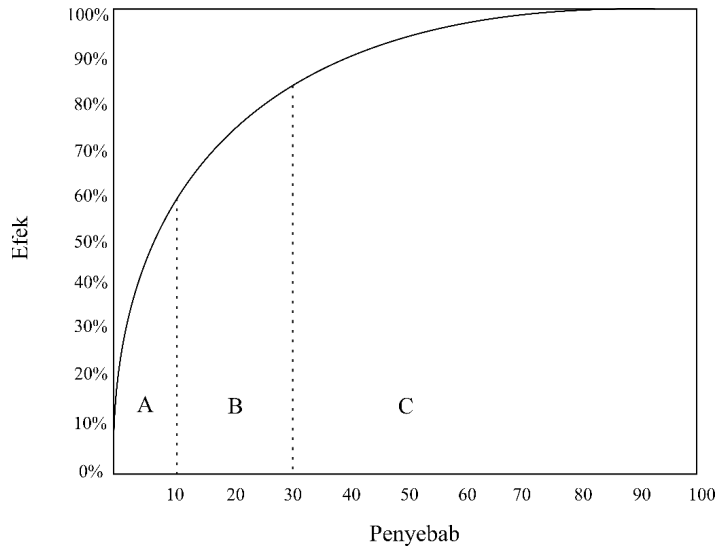

Figure 2. ABC Analysis Chart

3. Methods

This research is a study with a descriptive method of analysis. The type of approach used is a case study approach, namely by looking at the problems faced by the Logistics Department of PT Kharisma Rattan Mandiri in managing material inventory in 2021. There are 2 types of population in this study, namely the first population in the form of material supplies for Winston Rattan High back Armchair at PT Kharisma Rattan Mandiri. The samples are 14 types of materials for the Winston Rattan High back Armchair chair of PT Kharisma Rattan Mandiri at production time in the period of February 2021 - March 2021. The second population is logistics department staff, PPIC, production manager and rattan production trainee manager. The samples are logistics department staff, PPIC, Production Manager and Rattan Production Trainee Manager who are involved in the transaction of purchasing material inventory for Winston Rattan High back Armchair and the use of materials in the processing of these. The staff and manager who take care of this matter are 5 people. The data used in this study are primary data and secondary data. Primary data,

collected by means of conducting observations and in-depth interviews with informants. The interview was conducted by the author and a record was carried out on the informant's answers. Secondary data was collected using seat booking documents during 2021, the use of Winston Rattan High back Armchair seat materials, and the price of Winston Rattan High back Armchair seat materials. The data obtained in this study will be processed, analyzed, and processed using the ABC classification method to get an idea of the use of the inventory of materials for the Winston Rattan High back Armchair chair of PT Kharisma Ratan Mandiri and the investment value of these materials. Thus, a classification of goods will be obtained according to their type, namely goods that have a high, medium, and low value. Furthermore, the picture is deepened using abc critical index analysis.

4. Data Collection

The data collection process lasted for 14 days started with identifying the processes that took place in the factory and observed the manufacture of the Winston Rattan High back Armchair. The retrieved data by researchers is the data that related to the company's production and procurement process of materials which includes buyer order data in 2021, material data every month, data on the purchase price of materials, and data on the production process of Winston Rattan High back Armchair in 2021. All the needed Tables 1-3 below.

Table 1. Use of Materials for Winston Rattan Highback Armchair in 2021

No	Product Name	Quantity in a year (2021)	UoM
1	Rotan Semi *polesh* 24/48	2055	Kilogram
2	Rotan Semi *polesh* 18/20	1027,5	Kilogram
3	Kayu Sendid	205,5	Kilogram
4	Kubu *polesh* 9/10	1198,75	Kilogram
5	*Screw* 8*2,5	10960	Buah
6	*Screw* 6*1,5	16440	Buah
7	Paku F25/30	68500	Buah
8	Lem	685	Buah
9	*Seat Pillow* Kain SPT	1027,5	Meter
10	*Back Pillow* Kain SR-10	1027,5	Meter
11	*Single Face*	685	Lembar
12	*PACKING-BOX L-SHAPE* 200lbs	685	Lembar
13	Logo	685	Buah
14	Amplas	685	Buah

Table 2. Winston Rattan Highback Armchair Chair Material Price in 2021

No	Product Name	Price
1	Rotan *Semi Polesh* 24/48	Rp 18.500,00
2	Rotan *Semi Polesh* 18/20	Rp 18.500,00
3	Kayu Sendid	Rp 31.500,00
4	*Kubu Polesh* 9/10	Rp 21.500,00
5	*Screw* 8*2,5	Rp 195,00
6	*Screw* 6*1,5	Rp 95,00
7	Paku F25/30	Rp 6,50
8	Lem	Rp 7.500,00
9	*Seat Pillow* Kain SPT	Rp 174.587,00
10	*Back Pillow* Kain SR-10	Rp 233.087,50
11	*Single Face*	Rp 27.500,00
12	*PACKING-BOX L-SHAPE 200lbs*	Rp 145.000,00
13	Logo	Rp 3.000,00
14	Amplas	Rp 10.000,00

Table 3. Critical Value Material chair Winston Rattan Highback Armchair

Nilai Kritis bahan baku kursi Winston Rattan High Back Arm Chair					
No	**Product Name**	Kuantitas pemakaian di tahun 2021	Nilai Kritis		
			MT Produksi Rotan	Manager Produksi	Kepala Regu Logistik
1	Rotan Semi *polesh* 24/48	2055	3	3	3
2	Rotan Semi *polesh* 18/20	1027,5	3	3	3
3	Kayu Sendid	205,5	3	3	2
4	Kubu *polesh* 9/10	1198,75	3	3	2
5	*Screw* 8*2,5	10960	2	3	2
6	*Screw* 6*1,5	16440	2	3	2
7	Paku F25/30	68500	2	2	3
8	Lem	685	1	1	1
9	*Seat Pillow* Kain SPT	1027,5	3	3	2
10	*Back Pillow* Kain SR-10	1027,5	3	3	2
11	*Single Face*	685	1	2	2
12	*PACKING-BOX L-SHAPE* 200lbs	685	2	2	1
13	Logo	685	1	1	2
14	Amplas	685	1	1	1

Researchers also conducted an interview by asking questions directly with stakeholders that related to the procurement of material supplies for the Winston Rattan High back Armchair chair which includes the Head of the Logistics Squad, Rattan Production Manager, and Rattan Production Trainee Manager to obtain information on production data and procurement of chair materials which includes providing critical values for the winston Rattan High back Armchair chair materials at PT Kharisma Ratan Mandiri that shows in Table 3 above. In the recapitulation data table above, the number of Winston Rattan Highback Armchair sales that occurred in 2021 of PT Kharisma Rotan Mandiri is a total of 685 sales.

5. Results and Discussion

At the data processing stage, the usage value, investment value and critical value of materials are identified with the help of the documentation that has been collected and the interviews that have been carried out. The data processing carried out in this study is as follows:

1. Grouping materials into categories A, B, and C based on the value of use for one year.
2. Grouping materials into categories A, B, and C based on the investment value for one year.
3. Group materials into categories A, B, and C based on the critical index value for each material.

5.1 Material Group Based on Usage Value

The percentage of use of each material can be calculated using the calculation (4.1). The cumulative percentage per year can be calculated using equation (4.2) to classify materials into three classes, namely classes A, B, and C.

$$\%Usage\ in\ a\ year = 100\% \times \frac{x}{\sum x} \quad \text{.....(4.1)}$$

$$\%Cumulative\ Usage\ in\ a\ year = (a) + (b) \quad \text{.....(4.2)}$$

Description:

$\sum x$ = The total amount of material usage

x = Amount of material usage (item / year)

(a) = The percentage of usage per year is calculated (%)

(b) = The cumulative percentage of usage per year is calculated in advance (%)

The results of grouping materials for Winston Rattan Highback Armchair based on their use value during 2021 at PT Kharisma Rattan Mandiri which can be seen in Table 4.

Table 4. Material Use Value Group winston Rattan Highback Armchair chair

No	Product Name	Quantity in a year (2021)	%Quantity per year	Cumulative %Quantity per year	Class	Usage Value
1	Paku F25/30	68500	65%	65%	A	3
2	*Screw* 6*1,5	16440	16%	80%		
3	*Screw* 8*2,5	10960	10%	91%	B	2
4	Rotan Semi *polesh* 24/48	2055	2%	93%		
5	Kubu *polesh* 9/10	1198,75	1%	94%		
6	Rotan Semi *polesh* 18/20	1027,5	1%	95%		
7	*Seat Pillow* Kain SPT	1027,5	1%	96%	C	1
8	*Back Pillow* Kain SR-10	1027,5	1%	97%		
9	Lem	685	1%	97%		
10	*Single Face*	685	1%	98%		
11	*PACKING-BOX L-SHAPE* 200lbs	685	1%	99%		
12	Logo	685	1%	99%		
13	Amplas	685	1%	100%		
14	Kayu Sendid	205,5	0%	100%		
TOTAL		105866,75				

Table 5 and recapitulation graph for the results of the calculation of the usage value that has been done can be seen in the Figure 4 & 5 below.

Table 5. Recapitulation of the Value of The Use of Materials for The Winston Rattan Highback Armchair

Class	Quantity	%Quantity	Item	%Item
A	84940	80%	2	14%
B	15241,25	14%	4	29%
C	5685,5	5%	8	57%
TOTAL	105866,75	100%	14	100%

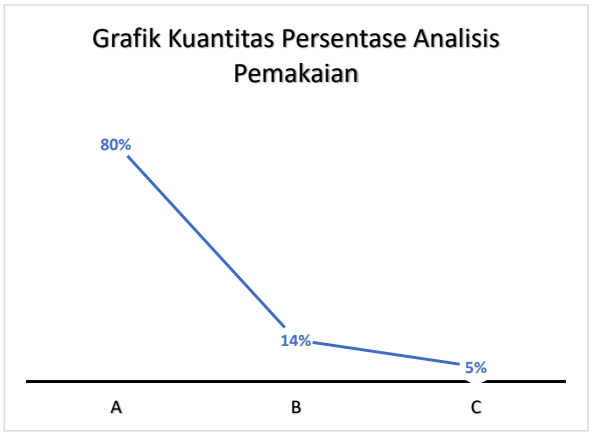

Figure 4. Usage Analysis Quantity Percentage

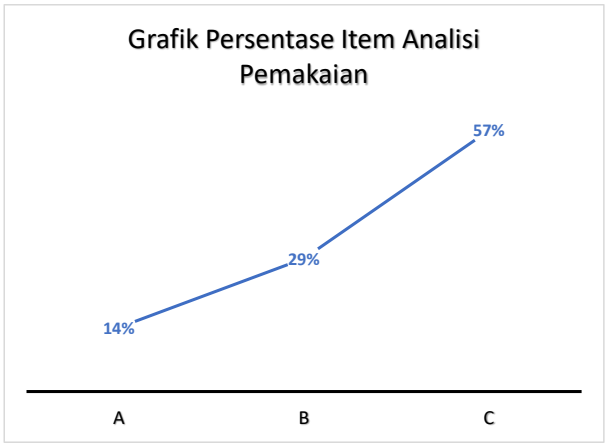

Figure 5. Percentage of Usage Analysis Items

After being grouped based on the usage value, two materials are obtained which are included in the class A group, four materials are included in class B, and eight materials are included in class C. Materials included in class A are F25/30 nails and 6*1.5 screws. While the materials included in class B are screw 8*2.5, semi polish rattan 24/48, polish camp 9/10, and semi polish rattan 18/20. The materials for Winston Rattan High back Armchair seats that belong to class C are SPT cloth seat pillows, SR-10 fabric back pillows, glue, single face, 200lbs L-shape packing-boxes, logos, sandpaper, and joint wood.

5.2 Material Group Based on Investment Value

Grouping of materials by investment value is carried out by grouping goods by cumulative percentage by calculation of the formula (4.3). Similar with the previous formula, the grouping of materials by investment value calculates the amount of investment per item as in the calculation (4.4). The calculation of the percentage of investment value can be seen in the formula (4.5) (Table 6)

$$x = n \times hi \quad (4.3)$$

$$\%Value = \frac{Value}{Total\ Value} \times 100\% \quad (4.4)$$

$$\%Cumulative\ Value\ per\ year = (a) + (b) \quad (4.5)$$

Description:

x = The amount of investment per item of materials for a year

n = Number of material items for a year

hi = Unit purchase price of materials

(a) = The percentage of usage per year is calculated (%)

(b) = The cumulative percentage of usage per year is calculated in advance (%)

The result of the calculation of the investment value for each material of the Winston Rattan High back Armchair chair at PT Kharisma Ratan Mandiri,

Table 6. Investment Value of Chair Materials Winston Rattan High Back Armchair

No	Product Name	Quantity in a year (2021)	Price	Value	%Value	%Cumulative Value	Class	Nilai Investasi
1	*Back Pillow* Kain SR-10	1027,5	Rp 233.087,50	Rp 239.497.406,25	37%	37%	A	3
2	*Seat Pillow* Kain SPT	1027,5	Rp 174.587,00	Rp 179.388.142,50	28%	65%		
3	*PACKING-BOX L-SHAPE 200lbs*	685	Rp 145.000,00	Rp 99.325.000,00	15%	80%		
4	Rotan *Semi Polesh* 24/48	2055	Rp 18.500,00	Rp 38.017.500,00	6%	86%	B	2
5	*Kubu Polesh* 9/10	1198,75	Rp 21.500,00	Rp 25.773.125,00	4%	90%		
6	Rotan *Semi Polesh* 18/20	1027,5	Rp 18.500,00	Rp 19.008.750,00	3%	93%		
7	*Single Face*	685	Rp 27.500,00	Rp 18.837.500,00	3%	96%	C	1
8	Amplas	685	Rp 10.000,00	Rp 6.850.000,00	1%	97%		
9	Kayu Sendid	205,5	Rp 31.500,00	Rp 6.473.250,00	1%	98%		
10	Lem	685	Rp 7.500,00	Rp 5.137.500,00	1%	99%		
11	*Screw* 8*2,5	10960	Rp 195,00	Rp 2.137.200,00	0%	99%		
12	Logo	685	Rp 3.000,00	Rp 2.055.000,00	0%	100%		
13	*Screw* 6*1,5	16440	Rp 95,00	Rp 1.561.800,00	0%	100%		
14	Paku F25/30	68500	Rp 6,50	Rp 445.250,00	0%	100%		
TOTAL		105866,75		Rp 644.507.423,75				

Table 7 and recapitulation graph for the results of the calculation of the usage value that has been done can be seen Figure 6- 8 below.

Table 7. Recapitulation of Investment Value of Winston Rattan Highback Armchair Chair Material

Class	Quantity	%Quantity	Item	%Item	Value
A	2740	3%	3	21%	Rp 518.210.548,75
B	4281,25	4%	3	21%	Rp 82.799.375,00
C	98845,5	93%	8	57%	Rp 43.497.500,00
TOTAL	105866,75	100%	14	100%	Rp 644.507.423,75

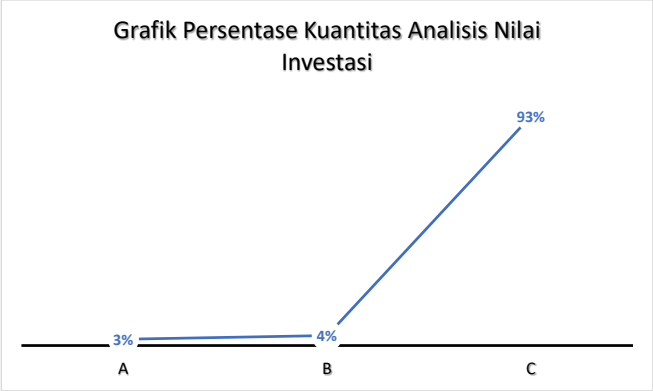

Figure 6. Percentage Quantity Analysis of Investment Value

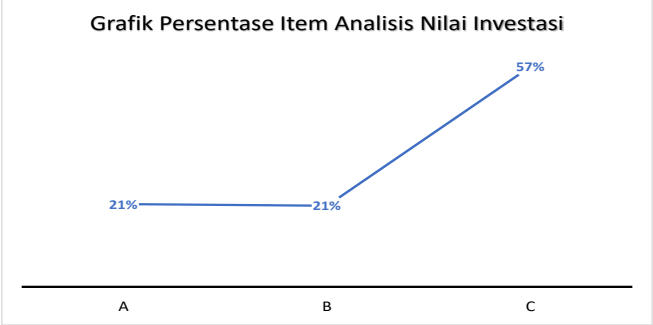

Figure 7. Percentage of Investment Value Analysis Items

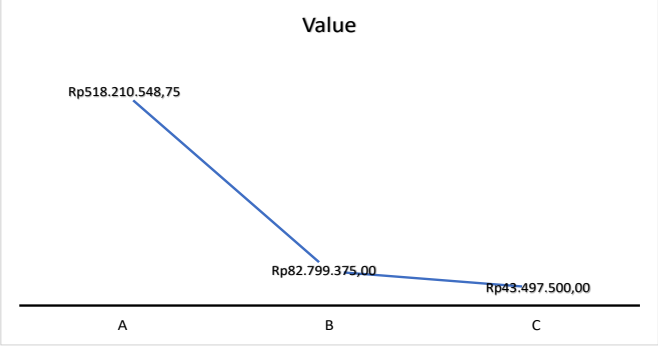

Figure 8. Investment Value Analysis

The total investment spent by the company for the procurement of all materials for the Winston Rattan Highback Armchair seat was IDR 644,507,423.75. After being grouped based on the investment value, three materials were obtained which were included in the class A group, three materials were included in group B, and eight materials were included in group C. The materials included in group A are seat pillow SPT fabric, back pillow SR-10 fabric, and packing-box L-shape 200lbs. The materials included in group B are 24/48 semi polish rattan, 9/10 polish camp, and 18/20 semi polish rattan. The materials included in group C are glue, single face, logo, sandpaper, joint wood, screw 8*2.5, nail F25/30 and screw 6*1.5.

The class classification on each material shows the degree of importance of handling materials based on the value of the investment that the company spends on each of the materials. The greater the value of the company's investment in a material, the more important the material will be. Improper handling of materials will cause losses to the company because materials are the capital of a company to carry out its production process.

Group A shows materials with a very large total investment value for the company, materials with group A will be the company's top priority in handling material control if viewed from the investment value because the mishandling of materials in group A can have a very large loss impact on the company when compared to other materials of the group. Group B shows materials with a large total investment value but not as large as materials with group A, materials with group B will be the second priority for after group A materials in handling material control when viewed from the investment value given. Group C shows materials with a low total investment value, materials with group C tend to be more abundant compared to other groups. Materials with group C will be the last priority for companies in handling material control when viewed from the investment value issued by the company.

5.3 Group of Materials Based on Critical Index Values

The average critical value is obtained by summing all the values given by the three stakeholders to the materials of the Winston Rattan High back Armchair chair then divided by the total stakeholders. The calculation used to analyse the critical value is the formula (4.6).

$$Average = \frac{NK(a)+NK\ (b)+NK\ (c)}{Total\ Stakeholders} \quad \text{..... (4.6)}$$

Description:

NK = Critical value

NK_a = Critical Value of respondents (a)

NK_b = Critical Value of respondents (b)

NK_c = Critical Value of the respondent (c)

The results of the calculation of the average critical value of the material of the Winston Rattan High back Armchair seat can be seen below. (Table 7)

Table 7. Critical Value of Chair Materials Winston Rattan High Back Armchair

No	Product Name	Kuantitas pemakaian di tahun 2021	Nilai Kritis			Rata-rata nilai kritis
			(a)	(b)	(c)	
1	Rotan Semi *polesh* 24/48	2055	3	3	3	3,00
2	Rotan Semi *polesh* 18/20	1027,5	3	3	3	3,00
3	Kayu Sendid	205,5	3	3	2	2,67
4	Kubu *polesh* 9/10	1198,75	3	3	2	2,67
5	*Screw* 8*2,5	10960	2	3	2	2,33
6	*Screw* 6*1,5	16440	2	3	2	2,33
7	Paku F25/30	68500	2	2	3	2,33
8	Lem	685	1	1	1	1,00
9	*Seat Pillow* Kain SPT	1027,5	3	3	2	2,67
10	*Back Pillow* Kain SR-10	1027,5	3	3	2	2,67
11	*Single Face*	685	1	2	2	1,67
12	*PACKING-BOX L-SHAPE* 200lbs	685	2	2	1	1,67
13	Logo	685	1	1	2	1,33
14	Amplas	685	1	1	1	1,00

After the three analyses are completed, the usage value, investment value, and critical value are recalculated using the critical index value formula indicated by the following formula (4.7)

$$Nilai\ Indeks\ Kritis = NP + NI + (2 \times NK) \quad (4.7)$$

Description:

NP = Usage Value

NI = Investment Value

NK = Critical Value

The results of the recapitulation that has been carried out based on calculations of usage value, investment value, critical value, and critical value to be able to group based on ABC Analysis on the materials of the Winston Rattan High back Armchair can be seen Table 8 below.

Table 8. Categories Winston Rattan High Back Armchair Materials

No	Product Name	Quantity in a year (2021)	Value	NP	NI	NK	NIK	ABC IK
1	Rotan Semi *polesh* 24/48	2055	Rp 38.017.500,00	2	2	3,00	10,00	A
2	Rotan Semi *polesh* 18/20	1027,5	Rp 19.008.750,00	2	2	3,00	10,00	A
3	Kayu Sendid	205,5	Rp 6.473.250,00	1	1	2,67	7,33	B
4	Kubu *polesh* 9/10	1198,75	Rp 25.773.125,00	2	2	2,67	9,33	B
5	*Screw* 8*2,5	10960	Rp 2.137.200,00	2	1	2,33	7,67	B
6	*Screw* 6*1,5	16440	Rp 1.561.800,00	3	1	2,33	8,67	B
7	Paku F25/30	68500	Rp 445.250,00	3	1	2,33	8,67	B
8	Lem	685	Rp 5.137.500,00	1	1	1,00	4,00	C
9	*Seat Pillow* Kain SPT	1027,5	Rp 179.388.142,50	1	3	2,67	9,33	B
10	*Back Pillow* Kain SR-10	1027,5	Rp 239.497.406,25	1	3	2,67	9,33	B
11	*Single Face*	685	Rp 18.837.500,00	1	1	1,67	5,33	C
12	*PACKING-BOX L-SHAPE* 200lbs	685	Rp 99.325.000,00	1	3	1,67	7,33	B
13	Logo	685	Rp 2.055.000,00	1	1	1,33	4,67	C
14	Amplas	685	Rp 6.850.000,00	1	1	1,00	4,00	C

The calculation results found that the materials for the Winston Rattan High back Armchair chair which were included in category A were two items, category B as many as eight items, and category C as many as four items. The results are recapitulated into the following graph Figure 9.

Figure 9. ABC Analysis Results

Based on Table 8 and Figure 9, the material for the Winston Rattan Highback Armchair, categorized as B, is the material with the highest amount compared to other categories, namely eight items. Category A has the least number of materials, namely as many as 2 items. The grouping is carried out using the criteria of group A is materials with a critical index value ranging from a value of 9.5 – 12, group B if the value of the critical index of the material ranges from the value of 6.5 – 9.4, and group C if the value of the critical index of the material ranges from the value of 4 - 6.4.

After calculating the usage value, investment value and average critical value, the critical index value for each of the Winston Rattan High back Armchair materials was obtained. There are two materials included in group A, eight materials of group B, and four materials of group C. The materials belonging to group A are 24/48 semi polish rattan and 18/20 semi polish rattan. The materials included in group B are 9/10 polish camps, SPT fabric seat pillows, SR-10 fabric back pillows, 200lbs L-shape packing-boxes, joint wood, 8*2.5 screws, F25/30 nails and 6*1.5 screws. The materials included in group C are glue, single face, logo, and sandpaper.

The critical index value is used to determine the result of classifying materials by collaborating on the use value, investment value, and average critical value of a material. Critical value is given by five stakeholders. The critical index value will be used as a consideration for the company in the process of handling material control. The result of the calculation of the highest critical index value on the materials of the Winston Rattan High back Armchair chair is 24/48 semi polish rattan and 18/20 semi polish rattan with a value of 10.00. The highest critical index value indicates that the supply of semi-polish rattan materials 24/48 and semi polish rattan 18/20 is a critical inventory for the sustainability of the production process. In addition to having a very large amount of use, the materials with the highest critical index value also have a high investment value and turn over.

Companies need to place materials in group A into the top priority in inventory control because they have a very large use value and investment value, then materials with group B and then group C. Materials with group A require strict equitable distribution of the availability and quality of materials, a complete and accurate recording system, and regular review by influential decision makers within the company. Materials with group B require not too strict control, a good recording system, as well as periodic reviews. Materials with group C require simple monitoring, as well as a simple recording system.

5.4 Application of ABC Analysis of PT Kharisma Rattan Mandiri

As the grouping based on each value has been carried out, each item of material for the Winston Rattan High back Armchair chair which is category A has the amount of time and effort used to control the material of the chair more tightly and use a system that is always in conjunction with market expertise and product knowledge. to keep inventory at standard levels. Strict rules need to be enforced in maintaining the availability of category A products which are few in number but with the highest turnover value, such as personal supervision, good communication between relevant stakeholders (in this case logistics staff, head of PPIC, and rattan production manager), and using management Just-in-Time approach in order to minimize inventory buildup, increase production process efficiency, and make safety stock more balanced. The methods applied by the enforcement of these rules are regular monitoring, accurate recording, up-to-date forecasting, and JIT implementation in service policies.

For the item of material for the Winston Rattan High back Armchair category B, computerized techniques are more appropriate to use in the implementation of ABC analysis at PT Kharisma Rotan Mandiri, such as using Microsoft Access software. Operators spend more time using certain specialist skills to control category B, which has more materials and lower turnover value than category A. So it will be more efficient if these specialist skills are allocated to control inventory category A. The computer can control it through statistical calculations and completing more complex calculations quickly using a forecasting model, which is more appropriate for the application of category B. In addition, a rapid assessment method is also applied to control the limit order value.

For the item with the lowest turnover value but the highest number, namely the material for the Winston Rattan High back Armchair category C, the control needs to implement a simpler system that can obtain material supplies with the minimum administration. However, the control system for category C materials must be reliable and not lead to stockouts or large stockpiles of materials as has occurred. The use of investment in large inventories in category C requires only a low investment but can simplify the problem of controlling large quantities of materials well. This is the right policy for the faster moving category in class C. In the slow-moving material category, category C items with

higher value, the purchase to order policy needs to be adopted if possible, or if there is only one customer, PT Kharisma Rotan Mandiri can hold inventory and be wiser in reordering. In this case, because category C items are low value items and have little or no movement, little monitoring is required with a simple system. The large number of items also means that category C materials should be ordered less frequently by the logistics company PT Kharisma Rotan Mandiri.

The most effective inventory control system based on ABC analysis is to combine logical methods with the techniques. ABC analysis is the basis for inventory control which is also used as a basis for continuous inventory control where annual stocktaking needs to be avoided by routinely calculating inventory categories every week.

6. Conclusion

The results of classifying the Winston Rattan High back Armchair materials based on the use value, investment, and critical index. Based on the usage value for category A are F25/30 and screw 6*1.5. Category B are 8*2.5 screws, 24/48 semi polished rattan, 9/10 polished rattan, and 18/20 semi polished rattan. Category Care SPT fabric seat pillow, SR-10 fabric back pillow, glue, single face, 200lbs L-shape packing-box, logo, sandpaper, and wood joints. Based on the investment value for category A are SPT fabric seat pillows, SR-10 fabric back pillows, and 200lbs L-shape packing-boxes. Category Bare 24/48 semi polished rattan, 9/10 pole polished rattan, and 18/20 semi polished rattan. Category Care glue, single face, logo, sandpaper, joint wood, 8*2.5 screws, F25/30 nails and 6*1.5 screws. Based on the critical index value for category A are 24/48 semi polished rattan and 18/20 semi polished rattan. Category B are 9/10 polished stronghold, SPT fabric seat pillow, SR-10 fabric back pillow, 200lbs L-shape packing-box, wooden joints, 8*2.5 screws, F25/30 nails, and screws 6*1.5. The materials included in group C are glue, single face, logo, and sandpaper.

Through the results of the value-in-use analysis, it is known that many of the materials for the Winston Rattan High back Armchair are medium moving, this is evidenced by the large percentage of materials belonging to group B, the recommendations that must be the company's top priority in handling inventory problems by considering the critical value. Inventory control of critical index C group materials such as glue, single face, logo, and sandpaper does not have to be in stock and can be replaced with other supplies. This will help the company in minimizing costs and reducing the risk of accumulation of residual materials. It is known that many material items in group C have low investment values. So that the purchase can be reduced or replaced with other materials. Materials that are included in the critical index group A such as semi polished rattan 24/48 and semi polished rattan 18/20 need to be checked regularly so that the company does not over-order, causing a high risk of accumulation of residual materials and large investment costs. And so that the company does not run out or lack of materials when there is a surge in orders.

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Biography

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