GOODS CLASSIFICATION USING ABC AND VESO METHODS

(Case Study at Official Merchandise Widyatama University)

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Abstract---UStore needs to know what product items have the highest and lowest contribution to the value of money generated, so that UStore can develop strategies to increase sales. Therefore UStore needs to manage all inventory items. The purpose of this study is to find out which items have the highest to lowest contribution to sales in 2018 so that UStore can find out which types of items are a priority to be managed by the suppliers. The research method uses a quantitative approach to classify the level of importance, namely the ABC method that classifies inventory based on its value and the level of technical importance of VESO (Vital, Essential, Support, Operating). Of the 11 (eleven) product categories in UStore, the product items that have the highest contribution are Lanyards, because they are categorized as A and Vital.

Keywords---inventory, ABC method, VESO

I. Introduction

Year 2018 is the first operation of UStore (UTama Store) which is a store selling Official Merchandise of Widyatama University. UStore is a business venture new that was pioneered by the Widyatama Foundation for category Merchandise and Stationary, which is managed by MSU (Management Strategic Unit) Widyatama. UStore is officially in the open on the date of 19 October 2018 by Mr. Dr. Dian Triansyah Djani, S.E., MA. who is the Ambassador of the Indonesia to the United Nations. UStore was initiated by the Chairperson of the Widyatama Foundation Board of Trustees, Mrs. Sri Juniati, and managed by Mrs. Sri Juniati, Nissa Syifa Puspani, Annisa Maharani Suyono, and Muchammad Fauzi. Operational activity of UStore managed by the keeper store.

At present UStore has 136 product items with 11 product categories. In the period 2018/2019 UStore has sold 3,094 pcs with various kinds of items with a value of money amounting to Rp 102.937 million. Of the 136 items of products are sold. The amount of product that is purchased in the period 2018/2019 amounted to 7,507 pcs, it means there are 4,413 pieces that have not been sold . The rest of the products that have not been sold for 4,413 pcs is leftover stock that becomes the inventory to be sold in the period 2019/2020. Inventories are stored in a number that many just end up becoming waste and the use of space that is quite large (Garai & Bon, 2013). Inventory is an unemployed resource (idle resources) that existence is waiting for the more advanced (Bahagia, 2006). Inventories that fall into the category of waste can not be avoided, inventory is needed to create sales to generate profits (Riani, 2016). Control of supplies is important to control the

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amount of inventory that is optimal in order to minimize the occurrence of a shortage of inventory or excess inventory (Fauzi & Bahagia, 2019).

UStore need to know the item product what that has contributed the most high and most low on the value of the money that is generated, so UStore can create strategies to increase sales. By because it UStore need to manage the entire item inventory. One of the elements which require the planning and control of the right is the inventory (Purba, Suwazan, Wahjoedi, & Dzikrillah, 2016). Company have to manage the whole type of inventory within the time specified will require effort and time that is quite large. Then, we need a method to classify the level of importance or value of the company's inventory so that control can be carried out efficient (Martono, 2018). The purpose of the study this is to know the items of products that have contributed the most high to the low in sales in 2018, so that UStore can find out which types of items that are prioritized for its management.

II. Literature

The research method uses a quantitative approach to classify the level of importance, namely the ABC method that classifies inventory based on its value and the level of technical importance of VESO (Vital, Essential, Support, Operating). Primary data were used that data obtained from reports UStore Year 2018/2019. By using a combination of methods ABC and VESO be seen sharpening of the priority items of goods that need to be managed. Goods that are included in the AV category are items that are a high priority to be managed, while goods that are included in the CO category are goods that are not a priority to be managed.

Methods ABC is a method that is proposed by Pareto. The results of the study Pareto that 80% contributions tax given by the 20% mandatory taxes, the rest may be divided on a 15% contribution generated by the 30% mandatory taxes and 5% contribution generated by the majority of the 50% mandatory taxes. The method is then grown in use in various fields in them in the system inventory (Joy, 2006). In principle the method of ABC classify the types of goods based on the level of investment yearly which is absorbed in the supply of inventory for each type of goods. Based on the Pareto principle, goods can be classified into three categories as shown in Figure 1.
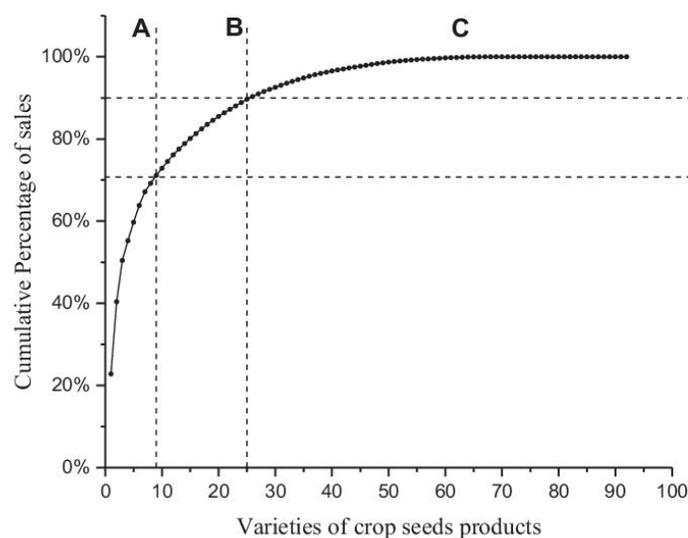

Figure 1. Pareto Chart of ABC Classification

Figure 1 shows the categories A, B, and C with principles 20, 30, 50. The following is an explanation (Bahagia, 2006):

Category A

Consists of the type of goods yes ng absorb funds about 80% of the entire capital of which is provided for inventory and the number of types of goods around 20% of all the genius of goods are managed.

Category B

Consisting of a kind item that absorbs funds approximately 15% of the entire capital of which is provided for inventory (after category A) and the number of types of goods around 30% of all the genius of goods are managed.

Category C

Consisting of a kind items that absorb the funds of about 5% of the entire capital of which is provided for inventory (which does not include a category A and B) and the number of types of goods around 50% of all the genius of goods are managed.

VESO (Vital, Essential, Support, Operating) is a category that is used in the method of ECR (Equipment Critically Rating). The explanation of the VESO category is as follows (Seifeddine, 2003):

Vital

It a component that is used for the primary, vital to the operation of the commercial and safety of workers. If the component is damaged it will cause the engine to shut down, have a high cost, or plant / personal safety is not guaranteed. Components of this requires a frequency monitoring are high in periodically.

Essential

It a component that is used in the process of or essential to the operation of commercial. If the component is damaged it will cause a reduction in production and have a high replacement cost. Components of this requires a frequency monitoring are high in periodically. Equipment which included a category this is the equipment processes and equipment auxiliary, which generally have the unit back up and if broken do not directly result in lost production, however, prolonged damage results in lost production

Support

Components that are used in the process and require periodic monitoring is routine. When a component is damaged, do not be an effect on the operation of commercial and safety. All equipment process more and equipment supporting life which if broken more than 72 hours it affects the conditions for the process of production.

Operating

All components that do not include a category 1, 2, and 3 and do not require periodic basis routine. If the component is damaged, it has no effect on safety and commercial operations. All equipment supporting life that does not include a classification that in the above, including categories of operations.

III. Methodology

In the study it conducted a combination of both methods of classification ABC and VESO. The whole item of goods will be categorizing based on the value of sales and the level of interest of technical. Here is the flow of research that is shown in Figure 2.
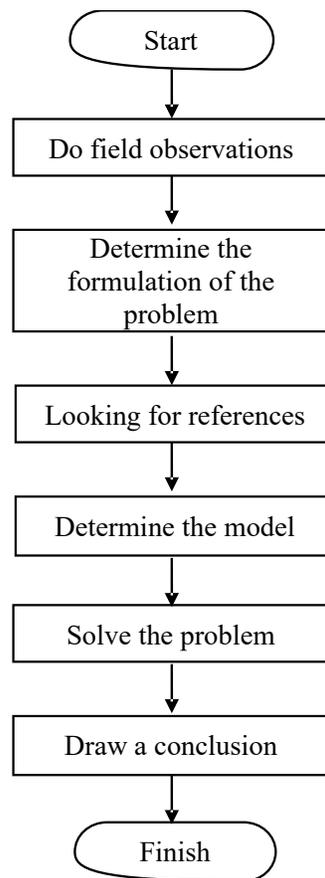

Figure 2. Research Flow

IV. Result and Discussion

In the period 2018/2019, Ustore has sold 3,094 pieces of 11 categories of products with a total sales IDR 102,937,000 such as that shown in Tabel 1.

Tabel 1. Sales Data

Category	Quantity	Sales
Lanyard	1,826	IDR 38,940,000
Jacket	77	IDR 19,600,000
T-Shirt	109	IDR 12,430,000
Wangky	77	IDR 12,320,000
Mug	85	IDR 4,345,000

Category	Quantity	Sales
Key Chain	442	IDR 3,944,000
Dolls	38	IDR 2,520,000
Sticker	315	IDR 2,508,000
Cap	30	IDR 2,400,000
Pouch	36	IDR 2,160,000
Tote bag	59	IDR 1,770,000
Total	**3,094**	**IDR 102,937,000**

From the result of data sales Table 1, shown category of product has been sorted by the value of money the highest to the lowest as the value of the absorption of funds. After that the product category is calculated its cumulative percentage to determine class A, B, or C as in Table 2.

Table 2. Cumulative Percentage of Funds Absorption Data

Category	Sales	% Sales	%Cumulative Sales
Lanyard	IDR 38,940,000	37.83%	37.83%
Jacket	IDR 19,600,000	19.04%	56.87%
T-Shirt	IDR 12,430,000	12.08%	68.95%
Wangky	IDR 12,320,000	11.97%	80.92%
Mug	IDR 4,345,000	4.22%	85.14%
Key Chain	IDR 3,944,000	3.83%	88.97%
Dolls	IDR 2,520,000	2.45%	91.42%
Sticker	IDR 2,508,000	2.44%	93.86%
Cap	IDR 2,400,000	2.33%	96.19%
Pouch	IDR 2,160,000	2.10%	98.29%
Tote bag	IDR 1,770,000	1.72%	100.0%
Total	**IDR 102,937,000**	**100.00%**	

From Table 2 looks there are four categories of the products that enter into the class A, four categories of the products class B, and three categories of the products class C. Here is a Pareto Chart ABC Method of Table 2 are shown in Figure 3.
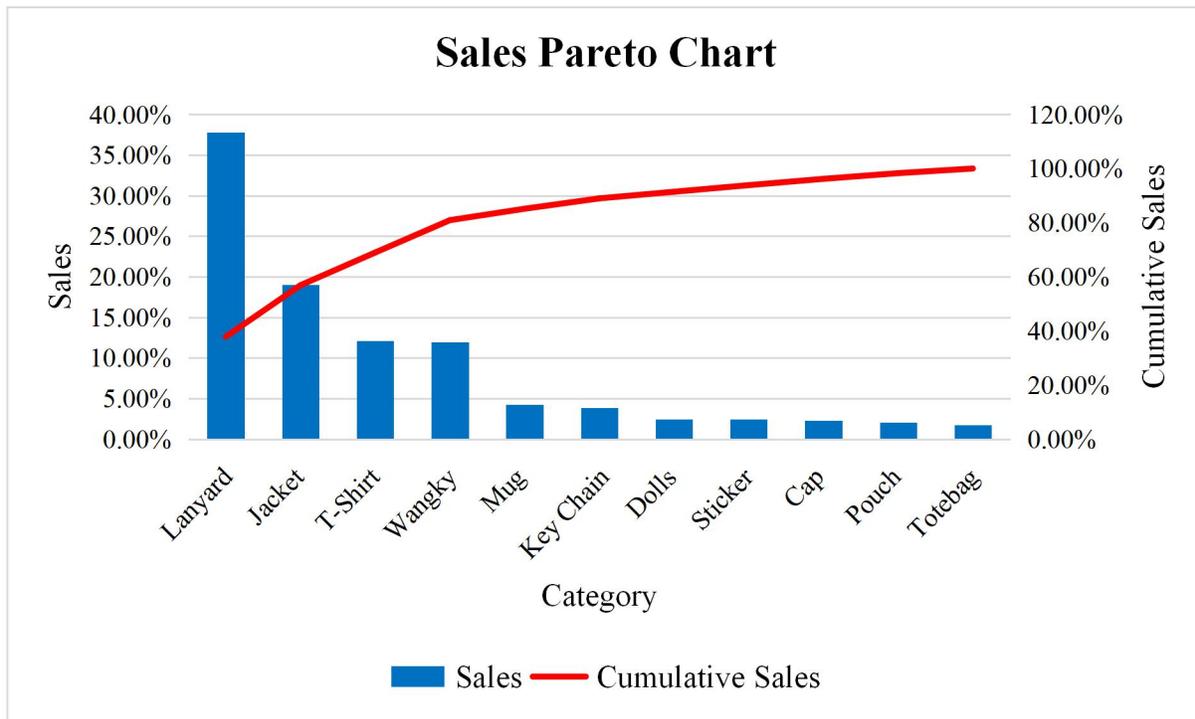
Figure 3. Pareto Chart ABC Classification

Based on Figure 3, ABC classification conclusions can be drawn as in Table 3.

Table 3 . ABC Classification

Category	% Sales	%Cumulative Sales	Class
Lanyard	37,83%	37,83%	A
Jacket	19,04%	56,87%	A
T-Shirt	12,08%	68,95%	A
Wangky	11,97%	80,92%	A
Mug	4,22%	85,14%	B
Key Chain	3,83%	88,97%	B
Dolls	2,45%	91,42%	B
Sticker	2,44%	93,86%	B
Cap	2,33%	96,19%	B
Pouch	2,10%	98,29%	C
Tote bag	1,72%	100,0%	C

Category	% Sales	%Cumulative Sales	Class
Total	100,00%		

After all categories have a classification ABC, hereinafter all categories rated by classification VESO as in Table 3. In the case UStore, criteria VESO adjusted with a system that is implemented in UStore. The following is the explanation:

Vital

The product is said to be vital if the products that have an impact that is great about the operation of commercial UStore. The products are much sought after consumers and if the products are not there then it will have an impact on the decline in profit-making an impact on the deficit of the company. By because it is very necessary controlling stock in periodically with the well.

Essential

The product is said to be essential if the products are very necessary for the operation of commercial UStore. Products that have a value that is high and sought after consumers.

Support

The product is said to be supporting if the products are sales slow, it does not overly affect the operation of commercial UStore.

Operating

The product is said to be operational if the product does not fall into the vital, essential, and supporting categories. When selling a product that is very slow no effect on the operation of commercial UStore.

Tabel 4. Goods Classification Based on ABC and VESO Methods

	V	E	S	O
A	Lanyard	Jacket	Wangky T-Shirt	-
B	Key Chain	Pouch	-	Dolls
C	Sticker	Cap Tote bag	-	-

V. Conclusion

Based on the discussion can be drawn the conclusion, that of the 11 categories of products that exist in UStore, items of products that most have contributed to height is Lanyard, because it belongs to category A and Vital. Here is the order of priority products from the highest to the lowest

Tabel 5. Conclusion ABC and VESO Methods

Category	Class

Category	Class
Lanyard	AV
Jacket	AE
Wangky	AS
T-Shirt	AS
Key Chain	BV
Mug	BV
Pouch	BE
Dolls	BO
Sticker	CV
Cap	CE
Tote bag	CE

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