Analysis of the SVM Method to Determine the Level of Online Shopping Satisfaction in the Community

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Abstract: Online shopping is an activity of buying goods done online (virtual). This online shopping process is done because it doesn't waste a lot of time. With online shopping, it is very easy for people. Just need open mobile phone view and select the desired item and then order goods and goods will be delivered to the house. But online shopping sometimes also has drawbacks which are one of the reasons people don't want to shop online, such as long shipping times, expensive shipping costs. Therefore a study was made about the level of public satisfaction in online shopping. Researchers will make a data classification about the level of public satisfaction in online shopping using the SVM method. This study aims to see the level of public satisfaction with online shopping, many or nope satisfied people when shopping online. The first step is to collect data that will be used in the data mining process. After that, data preprocessing will be carried out planning the design of the SVM method and finally the prediction process to get Classification results. Then the classification results obtained using the SVM method in data mining show that 34 people are satisfied with online shopping (for a representation result of 59.65%), 23 people are dissatisfied with online shopping (for a representation result of 40.35%). These results state that there are still many people who are satisfied with shopping online and there are some people who are dissatisfied with online shopping.

Keywords: Confusion Matrix, Data Mining, Online Shopping, Orange, Roc Analysis, Support Vector Machine (SVM)

INTRODUCTION

The property business is a business or business activity carried out by individuals or companies engaged in property ownership that can be used as an asset, either in the form of land, buildings and all the facilities and infrastructure contained therein as a single unit. Griya Jati Los Housing offers a type 36 residence or residence with a land area of 7x12 and a 6x6 house area with 1 living room, 2 bedrooms and one bathroom. Griya Jati Los Housing is one of the property businesses located in Jl. Tuntung Lake Balai Village, Labuhanbatu Regency, South Rantau, North Sumatra with zip code 21421. Griya Jati Los Housing was established in 2017 and is already inhabited by ± 50 Family Cards. Griya Jati Los housing is under the auspices of PT. Surya Istana Raya and working with bank BTN (State Savings Bank). The strategic location makes Griya Jati Los housing an advantage because it is close to cross roads, taxes, schools and health centers. The majority of people in Griya Jati Los housing have jobs as entrepreneurs and also civil servants (PNS), so that the dominant housing community uses online shopping applications to shop for primary and secondary needs and the application that is widely used is shopee on the grounds that the goods are of sufficient quality and the prices are affordable. affordable. The

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Shopee application is an e-commerce application that is widely used by the public (Pratama Afrianto & Irwansyah, 2021). Residents of Griya Jati Los housing choose to shop online because most of the items they want have lower prices in online shopping applications compared to offline stores around the residential area.

Technological developments that occur cannot be prevented and will continue to develop according to the needs of current technological developments that provide shocks throughout the business world (Sari, Prayogi, Jufrizen, & Nasution, 2020). Therefore Indonesia is a country with the highest level of use of E-Commerce (Rahman, Fadrul, Yusrizal, Marlyna, & Momin, 2022). What is meant by the highest level is the number of users of E-Commerce applications such as Shopee, Lazada, Bukalapak. Because almost all activities are carried out using technology. Especially what often happens in this era of all-technology is online shopping activities (Pasharibu, Soerijanto, & Jie, 2020). Online shopping is an activity of buying goods made via the internet. Online shopping activities are carried out using certain applications. There are many online shopping applications that we can use to purchase goods, such as Shope, TokoPedia stores, Lazada, Bukalapak, jd.id and many other online shopping applications. E-commerce is increasingly in accordance with customer needs and we have explained e-commerce applications that are often used by people for online shop (Yanti Febrini, Widowati PA, & Anwar, 2019). However in this study we will not discuss the applications used to do online shopping. But in this research, we will look at the level of satisfaction of people when shopping online. Because sometimes there are still a lot of people who don't like online shopping and conversely there are also those who like online shopping, in their opinion it is more practical and doesn't waste a lot of time especially for those who are busy with work. Therefore we conducted this research to see the level of people's satisfaction when shopping online.

Customer satisfaction is a feeling or assessment of a customer on expectations of a choice of both products and services (Syahnur, Basalamah, & Gani, 2020). Therefore we need to look at the level of customer satisfaction when shopping online. Because not a few people think that an item purchased through online shop, when the item is not good, then it's an application error (items sold in the application are not good). So we need to look at the level of people's satisfaction when shopping online so we can see that people's dissatisfaction is based on the application or indeed they chose the wrong marketplace.

In this study we will classify data according to their respective groups based on certain categories. Classification is a technique of grouping data based on certain attribute categories. To carry out this classification, we need a data mining method that can be used to carry out a data classification. The method that we will use to classify this data is the Support Vector Machine (SVM) method (Lukman Priyambodo et al., 2022).

METHOD

The Support Vector Machine (SVM) method is the hyperplane that has the largest margin. Meanwhile, the hyperplane is a line that separates data between certain classes/categories and the margin is the distance between the hyperplane and the closest data in each class (Irmanda & Ria Astriratma, 2020)(Gheni & Algelal, 2020). But this method can only be used to handle two classes only. So if we want to handle more than two classes, we can use a Multiclass Support Vector Machine (SVM) (Dhina Nur Fitriana & Yuliant Sibaroni, 2020). The Support Vector Machine (SVM) method can be grouped into two parts, namely the linear SVM and non-linear SVM methods (Raif et al., 2019). The Support Vector Machine (SVM) method is a method that will give results Classification negative or positive (Similarity, 2021). This method will group the classification results based on certain categories using training data and testing data (Hakim, Mutrofin, & Ratnasari, 2016). The SVM method is a classification method in data mining that can group data based on the class of each data.
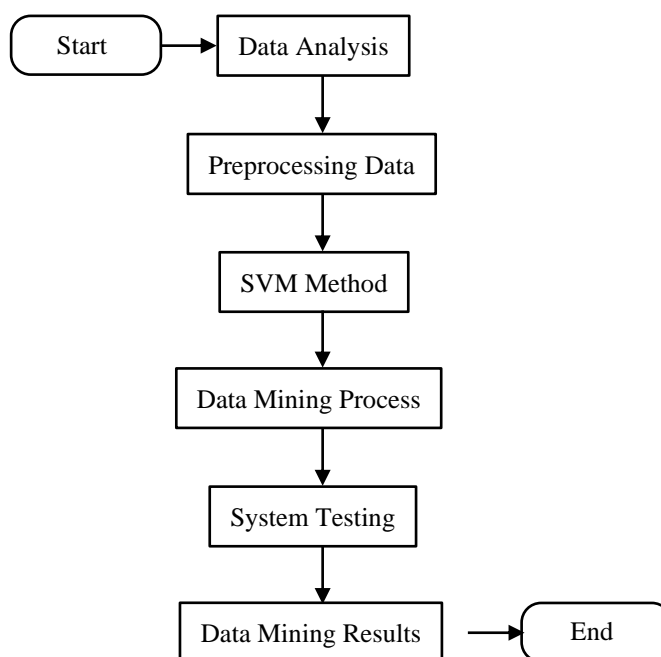
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Figure 1. *Research Flowchart*

Figure 1 above is a flow chart (chart) of the process in this study. First the researcher will conduct data analysis which is the process of selecting and determining the data to be used as a sample in this study. There are 2 data to be used, namely training data and testing data. Inside In this data there are several data attributes that are used such as full name, gender, address (block/house number, online shop application, price, quality, shipping speed, shipping, costs. These data attributes will be used as parameters for the classification to be carried out. Next Data preprocessing which is the process of selecting data attributes from data analysis before entering the data mining process, then the SVM method is a method that will be used in the data mining process, at this stage it is also the process of designing the SVM method widget design to be used in data mining. Next is the data mining process, which is the process of using the SVM method which is carried out using the orange application. Furthermore, system testing is the process of testing a data mining widget in the orange application, such as Confusion Matrix and ROC Analysis. Finally, data mining results are results obtained from the data mining process and system testing with the data mining widget in the orange application.

Confusion Matrix

The confusion matrix is an easy and effective tool to use to show the performance of a Classification and is very easy to use to determine the results (Yun, 2021). The confusion matrix can be used to evaluate the work results of a model and can be used to determine the results of a data mining. The confusion matrix has several calculations, namely accuracy, precision and recall (Normawati & Prayogi, 2021) (Agustina, Adrian, & Hermawati, 2021).

RESULT

Data analysis

In the figure below is a dataset of the Griya Jati Los Residential community which will be used as a sample to determine the level of customer satisfaction when shopping online at certain marketplaces. The dataset contains certain attributes such as full name, gender, address (block/house number), online shop application, price, quality, shipping speed and shipping costs. We obtained the dataset by distributing questionnaires to online shopping customers (Griya Jati Los Residential community). We will classify this dataset using the Support Vector Machine (SVM) method.

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Table 1. People Data

Full Name	Gender	Address (Block/House Number)	Online Shopee Application	Price	Quality	Shipping Speed	Shipping Costs	Category
Abdul Rahman	Man	11 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Ade Liliyani	Woman	91 C	Shopee	Cheap	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Agus Putri	Woman	06 A	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Anto	Man	36 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Arif Prayoga	Man	44 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Ariyani	Woman	08 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Bambang	Man	90 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Dedek	Woman	44 C	Shopee	Affordable	Good	Normal (On Schedule)	Cheap	Satisfied
Desi	Woman	07 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Expensive	Not Satisfied
Devi	Woman	36 C	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Dewi	Woman	03 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Dewi Murni	Woman	75 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Diah	Woman	12 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied

*name of corresponding author

Dika	Man	06 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Dinda	Woman	45 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Eli	Woman	80 C	Shopee	Cheap	Good	Fast	Cheap	Satisfied
Eliza Simamora	Woman	83 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Erni Susanti	Woman	92 C	Shopee	Affordable	Good	Normal (On Schedule)	Expensive	Satisfied
Eva hariyani	Woman	41 C	Lazada	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Febri Wulandari	Woman	93 C	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Fitrah Wardana	Man	89 C	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Fitri	Woman	02 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Gusnar	Man	04 B	Shopee	Affordable	Not Good	Very Slow	Expensive	Not Satisfied
Hamzah	Man	01 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Husni Tamrin	Man	05 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Icha	Woman	05 A	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Indah bela	Woman	04 A	Shopee	Affordable	Reasonable	Fast	Cheap	Satisfied
Indah hasibuan	Woman	02 B	Shopee	Affordable	Reasonable	Slow	Expensive	Not Satisfied
Irawati	Woman	34 C	Shopee	Cheap	Good	Fast	Affordable	Satisfied

*name of corresponding author

Kiki	Woman	78 C	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Lubis	Man	01 A	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Maria Ulfa	Woman	81 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Miftah	Woman	07 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Nando	Man	04 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Expensive	Satisfied
Nelly	Woman	01 B	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Neneng	Woman	01 C	Toko Pedia	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Nur Halimah	Woman	04 B	Toko Pedia	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Nur halimah	Woman	04 B	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Nurhaminta	Woman	43 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Nurlia	Woman	06 A	Shopee	Affordable	Sangat Good	Normal (On Schedule)	Affordable	Satisfied
Nurul	Woman	38 C	Shopee	Cheap	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Putri	Woman	8 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Qory Soraya	Woman	82 C	Lazada	Cheap	Reasonable	Normal (On	Cheap	Satisfied

*name of corresponding author

						Schedule)		
Ratih	Woman	40 C	Shopee	Cheap	Good	Fast	Cheap	Satisfied
Ria Annisa	Woman	04 A	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Rinjani	Woman	45 C	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Sarman	Man	88 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Sartini	Woman	76 C	Shopee	Affordable	Reasonable	Normal (On Schedule)	Expensive	Not Satisfied
Sawabil	Man	03 B	Buka Lapak	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Sinambela	Man	71 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Suhaya Umami	Woman	02 B	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Tetty	Woman	87 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Tresya	Woman	79 C	Shopee	Cheap	Good	Fast	Affordable	Satisfied
Ucok	Man	07 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Vina Habsary	Woman	04 A	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Yuni Ananda	Woman	03 A	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Zainuddin	Man	80 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied

*name of corresponding author

Ontable 1, the table data above is data from the Griya Jati Los Housing community that we obtained by distributing questionnaires. This data is a dataset that we will use as a sample to determine the level of online shopping satisfaction.

Table 2. Attributes of community data

No	Attribute	Type	Descriptions
1	Full Name	Text	Community full name
2	Gender	Category	Gender Society
3	Address (block/house number)	Text	Community address
4	Online shopee application	Text	Applications used by the community
5	Price	Category	Product price (Goods)
6	Quality	Category	Product Quality (Goods)
7	Shipping speed	Category	Product delivery time (Goods)
8	Shipping costs	Category	Cost of shipping products (Goods)

The attribute table is data from the Griya Jati Los Housing community obtained by distributing questionnaires. The data is equipped with attributes, types and descriptions of each attribute.

Training Data

Training data is data used as a research sample. The data that will be used as a sample is data compiled in file.xlsx format. actually there are many formats that we can use, but we use an easy format..

Table 3. Data Training

Full Name	Gender	Address (Block/House Number)	Online Shopee Application	Price	Quality	Shipping Speed	Shipping Costs	Category
Abdul Rahman	Man	11 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Ade Liliyani	Woman	91 C	Shopee	Cheap	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Agus Putri	Woman	06 A	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Anto	Man	36 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Arif Prayoga	Man	44 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Ariyani	Woman	08 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied

*name of corresponding author

Bambang	Man	90 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Dedek	Woman	44 C	Shopee	Affordable	Good	Normal (On Schedule)	Cheap	Satisfied
Desi	Woman	07 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Expensive	Not Satisfied
Devi	Woman	36 C	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Dewi	Woman	03 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Dewi Murni	Woman	75 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Diah	Woman	12 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Dika	Man	06 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Dinda	Woman	45 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Eli	Woman	80 C	Shopee	Cheap	Good	Fast	Cheap	Satisfied
Eliza Simamora	Woman	83 C	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
Erni Susanti	Woman	92 C	Shopee	Affordable	Good	Normal (On Schedule)	Expensive	Satisfied
Eva hariyani	Woman	41 C	Lazada	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Febri Wulandari	Woman	93 C	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Fitrah Wardana	Man	89 C	Shopee	Affordable	Reasonable	Normal (On	Affordable	Satisfied

*name of corresponding author

						Schedule)		
Fitri	Woman	02 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Gusnar	Man	04 B	Shopee	Affordable	Not Good	Very Slow	Expensive	Not Satisfied
Hamzah	Man	01 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Husni Tamrin	Man	05 C	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Icha	Woman	05 A	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Indah bela	Woman	04 A	Shopee	Affordable	Reasonable	Fast	Cheap	Satisfied
Indah hasibuan	Woman	02 B	Shopee	Affordable	Reasonable	Slow	Expensive	Not Satisfied
Irawati	Woman	34 C	Shopee	Cheap	Good	Fast	Affordable	Satisfied
Kiki	Woman	78 C	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Lubis	Man	01 A	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Maria Ulfa	Woman	81 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Miftah	Woman	07 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Nando	Man	04 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Expensive	Satisfied
Nelly	Woman	01 B	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Neneng	Woman	01 C	Toko Pedia	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Nur Halimah	Woman	04 B	Toko Pedia	Affordable	Good	Normal (On	Affordable	Satisfied

*name of corresponding author

						Schedule)		
Nur halimah	Woman	04 B	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Nurhaminta	Woman	43 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Nurlia	Woman	06 A	Shopee	Affordable	Sangat Good	Normal (On Schedule)	Affordable	Satisfied
Nurul	Woman	38 C	Shopee	Cheap	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Putri	Woman	8 A	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Qory Soraya	Woman	82 C	Lazada	Cheap	Reasonable	Normal (On Schedule)	Cheap	Satisfied
Ratih	Woman	40 C	Shopee	Cheap	Good	Fast	Cheap	Satisfied
Ria Annisa	Woman	04 A	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Rinjani	Woman	45 C	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Sarman	Man	88 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
Sartini	Woman	76 C	Shopee	Affordable	Reasonable	Normal (On Schedule)	Expensive	Not Satisfied
Sawabil	Man	03 B	Buka Lapak	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
Sinambela	Man	71 C	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Suhaya Umami	Woman	02 B	Shopee	Affordable	Good	Normal (On	Affordable	Satisfied

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						Schedule)		
Tetty	Woman	87 C	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
Tresya	Woman	79 C	Shopee	Cheap	Good	Fast	Affordable	Satisfied
Ucok	Man	07 C	Toko Pedia	Expensive	Reasonable	Slow	Expensive	Not Satisfied
Vina Habsary	Woman	04 A	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
Yuni Ananda	Woman	03 A	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
Zainuddin	Man	80 C	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied

Ontable 2 contains data from the Griya Jati Los Housing community which will be used as a research sample. The data will be classified based on the category of levels of satisfaction and dissatisfaction in doing online shopping.

Table 4. People Data Columns

No	Attribute	Type	Role	Values
1	Nama	Text	Meta	
2	Gender	Categorical	Feature	Man, Woman
3	Address (Block/House Number)	Text	Meta	
4	Online Shopee Application	Text	Meta	
5	Price	Categorical	Feature	Affordable, Cheap, Expensive
6	Quality	Categorical	Feature	Good, Not Good, Reasonable
7	Shipping Speed	Categorical	Feature	Fast, Normal (On Schedule), Slow, Very Slow
8	Shipping Cost	Categorical	Feature	Affordable, Cheap, Expensive
9	Category	Categorical	Target	Satisfied, Not Satisfied

In the table above is column data that will be used to classify data on the level of online shopping satisfaction in the Griya Jati Los Housing community. Using the SVM method, we will classify the level of customer satisfaction by changing the category attribute type from feature to target, in order to make the category attribute a target so that later the data is classified and can be grouped into satisfied and dissatisfied customers when shopping online.

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Data Selection Process (Preprocessing)

The data selection process is a process of selecting and determining which attributes we will use and which we will not use when classifying data. The data will be selected through data preprocessing before later entering data mining to carry out data classification. The data that will be entered in the data mining process is name, gender, Address (Block/House Number), Online Shopee Application, Price, Quality, Shipping Speed, Shipping Cost, Category.

Data Mining Process

The data mining process is the process of designing widgets required by the SVM method. This widget is needed by the SVM method to classify customer satisfaction level data.
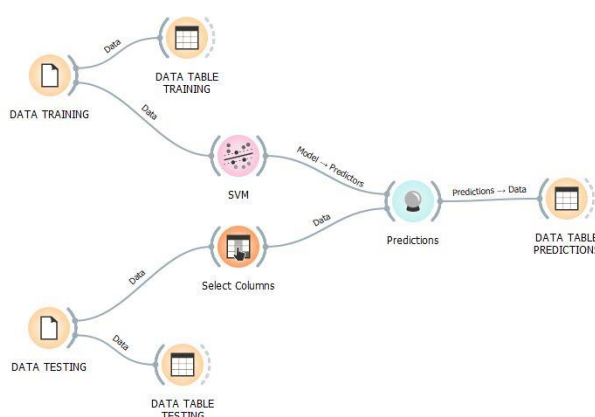
Figure 2. *Data Mining Process*

In Figure 2 is a widget that has been compiled as a data mining system design with the SVM method used to classify customer satisfaction level data when shopping online.

Model Classification Testing Process

In the testing process, the classification model is a process carried out to classify data using the SVM method. This process requires two pieces of data, namely training data and testing data. Both of these data are used to carry out a data classification.
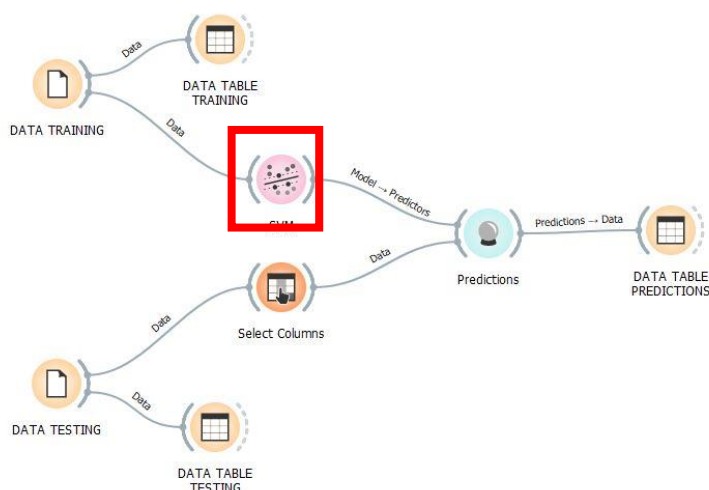

Figure 3. *Classification model widget design dataset social assistance receipt status*

Figure 3 shows the form of the widget required by the SVM method for classifying data. the widget in the red box is the SVM method used for data classification.

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Classification Model Prediction Process

In the prediction process, data classification will be carried out using the SVM method. Prediction is a function that is performed to determine certain patterns and widgets (Damuri, Riyanto, Rusdianto, & Aminudin, 2021). We will use this pattern to carry out a data classification.

	FULL NAME	ADDRESS (BLOCK/HOUSE NUMBER)	GENDER	ONLINE SHOPEE APPLICATION	PRICE	QUALITY	SHIPPING SPEED	SHIPPING COSTS	SVM
1	Abdul Rahman	11 C	Man	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
2	Ade Liliyani	91 C	Woman	Shopee	Cheap	Reasonable	Normal (On Schedule)	Affordable	Satisfied
3	Agus Putri	06 A	Woman	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
4	Anto	36 C	Man	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
5	Arif Prayoga	44 C	Man	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
6	Ariyani	08 C	Woman	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
7	Bambang	90 C	Man	Toko Pedia	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
8	Dedek	44 C	Woman	Shopee	Affordable	Good	Normal (On Schedule)	Cheap	Satisfied
9	Desi	07 A	Woman	Shopee	Affordable	Reasonable	Normal (On Schedule)	Expensive	Not Satisfied
10	Devi	36 C	Woman	Shopee	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
11	Dewi	03 C	Woman	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
12	Dewi Murni	75 C	Woman	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
13	Diah	12 C	Woman	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
14	Dika	06 C	Man	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
15	Dinda	45 C	Woman	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
16	Eli	80 C	Woman	Shopee	Cheap	Good	Cepat	Cheap	Satisfied
17	Eliza Simamora	83 C	Woman	Shopee	Cheap	Good	Normal (On Schedule)	Cheap	Satisfied
18	Erni Susanti	92 C	Woman	Shopee	Affordable	Good	Normal (On Schedule)	Expensive	Satisfied
19	Eva hariyani pulungan	41 C	Woman	Lazada	Affordable	Good	Normal (On Schedule)	Affordable	Satisfied
20	Febri Wulandari	93 C	Woman	Shopee	Cheap	Good	Normal (On Schedule)	Affordable	Satisfied
21	Fitrah Wardana	89 C	Man	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
22	Fitri	02 C	Woman	Shopee	Affordable	Not Good	Slow	Expensive	Not Satisfied
23	Gusnar	04 B	Man	Shopee	Affordable	Not Good	Very Slow	Expensive	Not Satisfied
24	Hamzah	01 C	Man	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
25	Husni Tamrin	05 C	Man	Shopee	Expensive	Not Good	Slow	Expensive	Not Satisfied
26	Icha	05 A	Woman	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied
27	Indah bela siregar	04 A	Woman	Shopee	Affordable	Reasonable	Cepat	Cheap	Not Satisfied
28	Indah hasibuan	02 B	Woman	Shopee	Affordable	Reasonable	Slow	Expensive	Not Satisfied
29	Irawati	34 C	Woman	Shopee	Cheap	Good	Cepat	Affordable	Satisfied
30	Kiki	78 C	Woman	Shopee	Affordable	Reasonable	Normal (On Schedule)	Affordable	Satisfied
31	Lubis	01 A	Man	Shopee	Expensive	Reasonable	Slow	Expensive	Not Satisfied

Figure 4. The results of the classification using the Support Vector Machine (SVM) method

Figure 4 above is the result of the Classification of the 57 predictions of Griya Jati Los Residential community data stating that 34 people are satisfied with online shopping (59.65% for representation results), 23 people are dissatisfied with online shopping (23 people for representation results) was 40.35%).

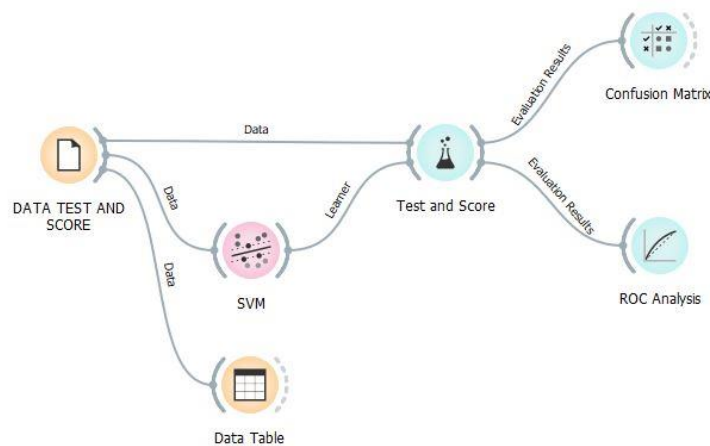### Classification Model Evaluation Results

Figure 5. Classification Evaluation Widget

Figure 5 contains a classification evaluation consisting of a widget to determine test scores and scores. Confusion Matrix and ROC Analysis will be applied using the SVM method. To get the results from the Confusion Matrix and ROC Analysis, we can use training data and testing data which have become 1 data generated from the previous Classification process. The data contains 3 attributes with text type and 5 attributes with category type.

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Table 5, Result of Test and Score

Model	AUC	CA	F1	Precision	Recall
SVM	0.997	0.965	0.965	0.967	0.965

In table 5 above, it is found that the test results and scores are the results of calculations from 57 community data that have been tested, so we will get results from AUC of 0.997, CA of 0.965, F1 of 0.965, Precision of 0.967, Recall of 0.965. These results were obtained using the SVM method.

Evaluation Results with Confusion Matrix

Confusion Matrix is a measuring tool that is used as a predictive tool to classify data based on certain categories using the SVM method.

Table 6, Result of Confusion Matrix

Predicted

		Satisfied	Not Satisfied	∑
Actual	Satisfied	34	0	34
	Not Satisfied	2	21	23
	∑	36	21	57

In table 6 on is the result of the confusion matrix, namely the True Positive (TP) result is 34. True Negative (TN) is 21, False Positive (FP) is 2 and False Negative (FN) is 0.

Evaluation Results with ROC Curve

The Roc Curve is obtained from the true signal (sensitivity) and (1 specificity) over the entire cut off point range to obtain the ROC curve visualized from the Confusion Matrix. The results of the ROC chart can be seen in Figure 6 and 7.
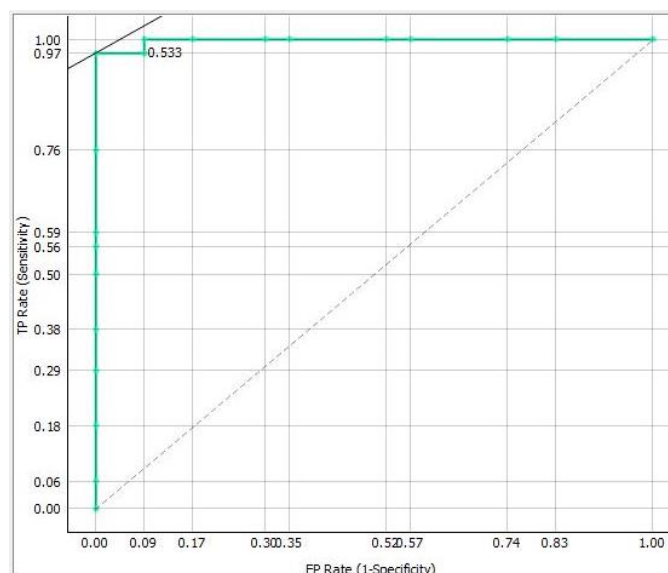

Figure 6. *ROC Analysis Targeting Social Assistance Eligible People*

Figure 6 states that result ROC Analysis satisfied people When shopping online using the SVM method with a result of 0.533.
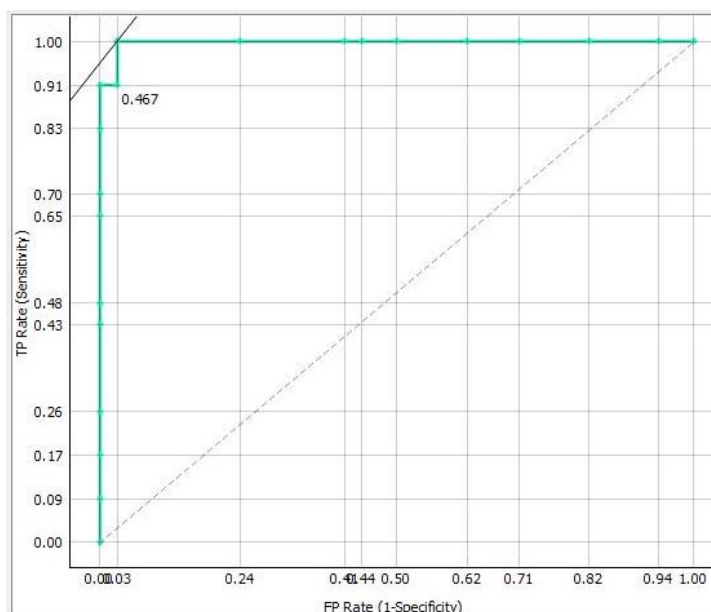
*name of corresponding author

***Figure 7.** ROC analysis targeting people who are not eligible for social assistance*

Figure 7 states that the results ROC Analysis dissatisfied people When shopping online using the SVM method with a result of 0.467.

DISCUSSIONS

Based on the results of the classification using the SVM method, the results of the classification of data on the level of online shopping satisfaction are obtained. From the results of the classification that has been carried out on data mining applied in the orange application, from 57 community data, the results obtained for people who are satisfied with online shopping are 34 people (for a representation result of 59.65%) for people who are not satisfied with online shopping of 23 people (for a representation result of 40.35 %). The accuracy obtained by using the test and score widget is 99.7% and for accuracy results with the confusion matrix widget is 96%. Comparison between the results of Classification using the SVM method with test and score and confusion matrix shows a fairly large difference in results. The difference in accuracy between the test and score with the confusion matrix is 3%, though both of them use the same method, namely SVM.

From the results of this comparison, the SVM method is the best method because it can provide the best results. The yield of the two widgets is about 90% more. This means that the accuracy obtained from the two widgets is the result of the best accuracy and also because it uses the best method.

CONCLUSION

After buying a product, the customer will feel a certain level of satisfaction or dissatisfaction. Satisfaction is the level of one's feelings after making a comparison between the product performance he feels and his expectations. Consumers can experience one of the general satisfaction levels, namely: If performance is below expectations, the customer will be dissatisfied, if performance matches expectations, the customer will be satisfied. This feeling of satisfaction and dissatisfaction will affect the customer, then the customer will buy the product again or not buy and communicate positively or negatively about the product to others. If the customer is satisfied, he will show a higher desire to buy the product again. Satisfied customers will also convey good comments about a product to others.

Consumer expectations are formed by: past buying experiences, comments from friends and acquaintances, and information and promises from marketers and competitors. If marketers raise customer expectations too high, buyers may be disappointed and dissatisfied. After I analyzed the level of satisfaction and dissatisfaction with the Griya Jati Los housing community using the SVM method. The result that I get is that there are still many people who are satisfied with doing online shopping.

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