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Decision Support System for Choosing the Best Mechanic Using the Smart Method at Cv. Garuda Mas Motor Binjai

[1]Yolanda Arta Sabrina Manik, [2]Achmad Fauzi, [3]Husnul Khair
[1,2,3] STMIK Kaputama, Binjai, Indonesia

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ABSTRACT

Mechanics are the most important asset in an automotive company, workshop mechanics are responsible for the maintenance and repair of motor vehicles when damage occurs. However, not only dealing with damage, mechanics also conduct thorough checks before damage to customers' vehicles occurs. To be able to provide satisfaction with vehicle maintenance services or motorcycle services, of course CV. Garuda Mas Motor Binjai must have good and reliable mechanics. So that customers will feel satisfied with the service provided by the Dealer. To obtain the best mechanic, of course, an assessment must be carried out on the mechanics who will work. Usually this assessment is carried out by the Dealer only by conducting direct testing on a case of damage problems without considering anything else. So that in some cases there are mechanics that are not in accordance with the qualifications desired by the Dealer. For this reason, it is necessary to build a decision support system that can help the Dealer in selecting the best mechanic on the CV. Garuda Mas Motor Binjai. From the data on the criteria for selecting the best mechanic, the results of the analysis of the SMART method from the 20 alternative data above, it can be seen that the one who obtained the best score or ranking is the mechanic on behalf of Suriono with the results of the analysis using the SMART method 0.85.

Email :
devysrii09@gmail.com

INTRODUCTION

Mechanics are the most important asset in an automotive company, workshop mechanics are responsible for the maintenance and repair of motor vehicles when damage occurs. However, not only dealing with damage, mechanics also conduct thorough checks before damage to customers' vehicles occurs.

CV. Garuda Mas Motor is one of the popular Honda *Dealers* in Binjai. *This dealer* is located at Jl. Soekarno Hatta Binjai Km. 21 No. 92, Binjai. This depot provides motorcycle buying and selling services, spare parts and motorcycle maintenance or *service*. A *dealer* will grow if the service provided to customers is very satisfactory. Not only a matter of sales service, but also a matter of motorcycle maintenance services or vehicle *services* for customers. To be able to provide satisfaction with vehicle maintenance services or motorcycle *services*, of course CV. Garuda Mas Motor Binjai must have good and reliable mechanics. So that customers will feel satisfied with the service provided by *the Dealer*. To obtain the best mechanic, of course, an assessment must be carried out on the mechanics who will work. Usually this assessment is carried out by the *Dealer* only by conducting direct *testing* on a case of damage problems without considering anything else. So that in some cases there are mechanics that are not in accordance with the qualifications desired by the *Dealer*.

For this reason, it is necessary to build a decision support system that can help the *Dealer* in selecting the best mechanic on the CV. Garuda Mas Motor Binjai. The selection with this decision support system uses several criteria such as employment period, education, attendance, customer satisfaction and a letter of reprimand. With the advent of a decision support system, it can provide input to *the Dealer* in choosing the best mechanic and minimize errors in the assessment process.

There are several methods that can be used to help in the decision-making process, including the SMART method. SMART (*Simple Multi Attribute Rating Technique*) is a multi-criteria decision-making method developed by Edward in 1997. This multi-criteria decision-making technique is based on the theory that each alternative consists of a number of criteria that have values and each criterion has a weight that describes how important it is compared to other criteria. This weighting is used to assess each alternative in order to obtain the best alternative (Beby Larasati et al., 2020).

There are several researchers who have used the SMART method in the decision-making process, including the title Decision Support System for the Selection of the Best Employees at the Batu Lima Notary Office using the SMART method. The result of this study is the application of the SMART method as one of the methods in the decision support system for the selection of the best employees based on criteria consisting of: discipline, performance results, self-ability, communication, and cooperation (Butet, 2021).

The next researcher is titled Smartphone Selection Decision Support System Using *the* Web-Based *Simple Multi Attribute Rating Technique* Method. The results of this study are obtained to help users in choosing the result (best decision) among several available alternative results. Based on the test to determine the ranking, a final score of 0.538 was obtained, which is included in the best ranking category, this system is considered feasible to be used in simplifying the assessment part and speeding up the selection process (Sitompul & Anwar, 2023).

METHOD

The research methodology is carried out to search for something systematically using scientific methods from applicable sources. In the process of this research, it is shown to provide more meaningful results CV. Garuda Mas Motor Binjai in the selection of the best mechanic. The results of the conceptualization will be poured into a complete research method with a literature study pattern, data collection needed to analyze the decision support system to be made, namely a decision support system for the selection of the best mechanic using the SMART method to get the right decision in the selection of the best mechanic. On the basis of the research methodology used in this study, a work method activity can be made as shown in the figure below.

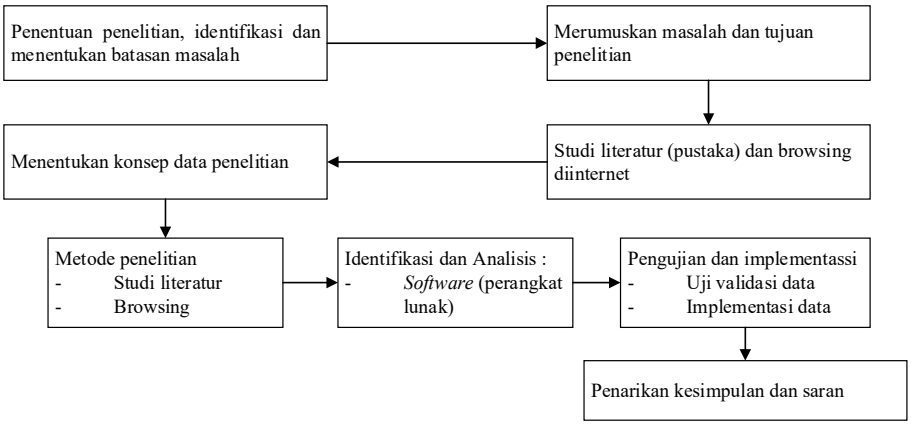

Figure 1. Research Methodology

Determine the place of research by identifying and determining the limits of the problems carried out so that it can be continued to identify and know the limits of the problems that exist in the place of research. Formulating problems and research objectives, namely determining the formulation of problems to be done what are the problems when conducting research at PT. Garuda Mas Motor Binjai, after getting the problem, made a research objective from the formulation of the problem so that the research could be continued. Literature study and internet browsing are carried out to find learning materials that support research according to the title. Starting from looking for books in the library, looking at reference journals, related theses to browsing the internet to complete literature studies. Determine the concept of research data by looking for data data that will be used as variables and calculations in decision-making. Identification and analysis are carried out to determine *the software* to be used. Identify by taking the data needed to get the steps or algorithms and logic of the SMART method when poured into a programming language that uses the php programming language. Testing and implementation, after the software is finished being used, then testing and use by *the user* is carried out. This test is carried out to determine the feasibility of the system to be used whether there are still shortcomings that must be completed so that the system is really suitable for

use. Conclusions and methods, after completing the research and *the software* is completed, conclusions and methods can be drawn that can be useful for anyone.

RESULTS AND DISCUSSION

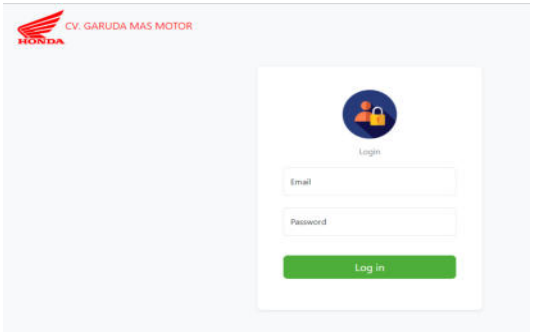

Figure 1. Login Page

From the image above to enter the main menu, users must log in to be able to use the system for selecting the best mechanic using the SMART method on CV. Garuda Mas Motor Binjai by entering username and password.

The main page will appear when the user successfully logs in, then the main display of the best mechanical selection system using the SMART method on CV appears. Garuda Mas Motor Binjai. In this main menu, there is a menu that is used to process in selecting the best mechanics using the SMART method which consists of a home menu, criteria, alternatives, SMART analysis, user data, password and logout. The main menu display is as follows.

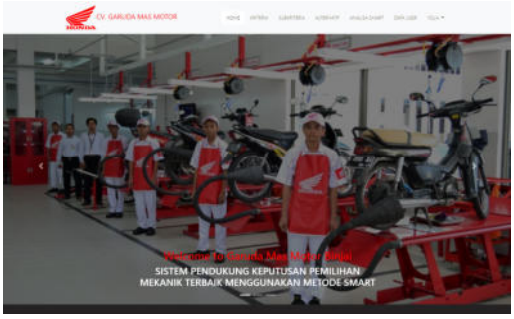

Figure 2. Home

This criterion menu is used to input criterion data which will later be used as a criterion in decision-making for the selection of the best mechanic using the SMART method on CV. Garuda Mas Motor Binjai, admins can add, change and delete data. The display of this menu is as follows.

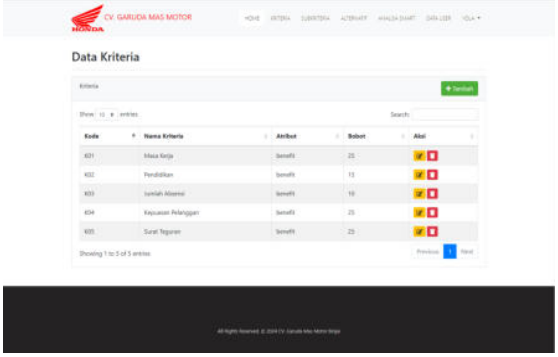

Figure 2. Criteria Menu

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This subcriteria menu is used to input subcriteria data from existing criteria for decision-making in the selection of the best mechanic using the SMART method on CV. Garuda Mas Motor Binjai, admins can add, change and delete data. The display of this menu is as follows.

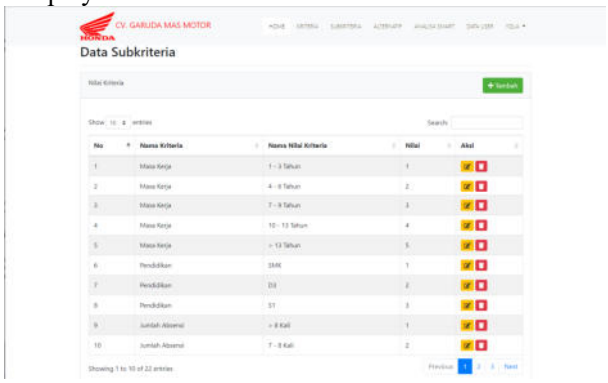

Figure 4. Subriteria Menu

This menu is used to add or change alternative data, such as alternative values on each criterion which will later be used as an alternative for system calculation analysis using the SMART method to obtain the best alternative value. The display of this menu is as follows.

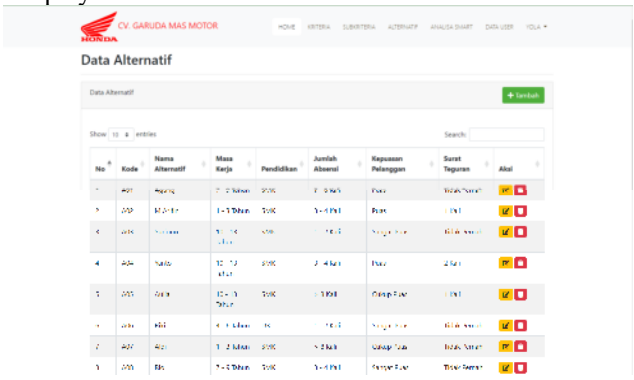

Figure 5. Alternative Menu

The analysis menu is used to process the analysis of the SMART method as well as display the results of the decision in selecting the best mechanic using the SMART method on the CV. Garuda Mas Motor Binjai. The display of this menu is as follows.

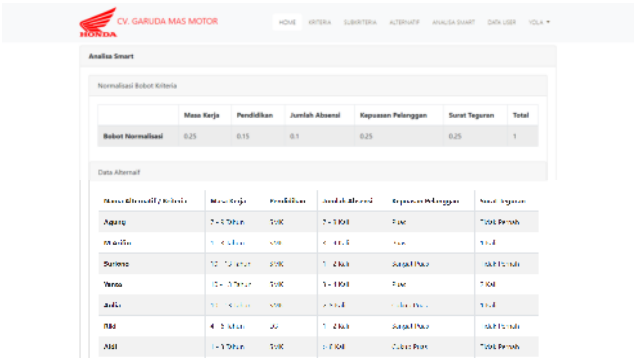

Figure 3. SMART method analysis

The print menu is a menu used to display and print the results of decisions that have been analyzed by the system. The display of this menu is as follows.

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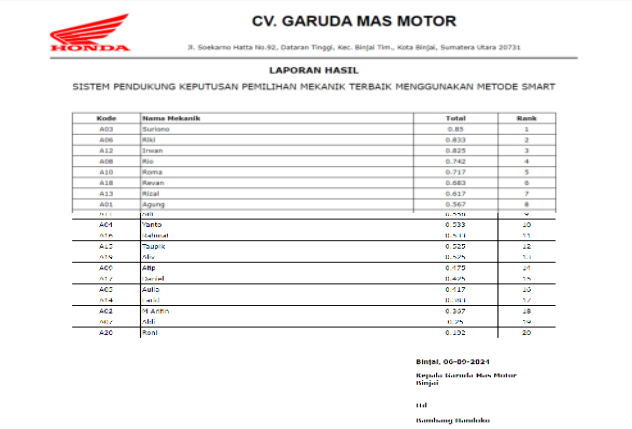

Figure 7. Print Menu

The user data menu or users provide data on users who use this system, namely admins. In this menu, admins can add, change and delete user data. The display of this menu is as shown in the image below.

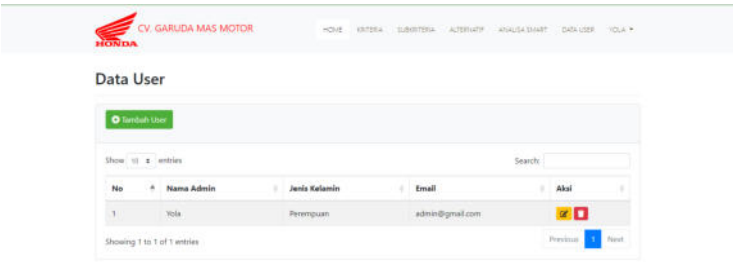

Figure 8. User Data Menu

The *password* page is used to change *passwords* for both admins and users or *users*. The display of this menu is as follows.

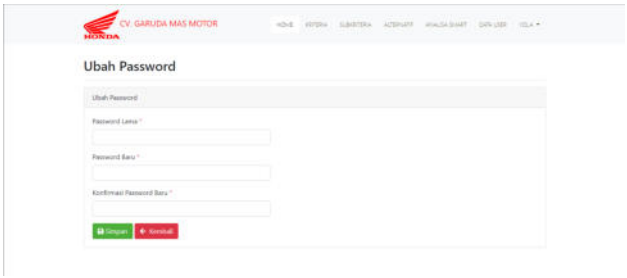

Figure 9. Password Menu

Discussion

The stages that will be explained regarding the results of the trial of the decision support system program in selecting the best mechanics using the SMART method with systematic calculations can help the leadership or HRD on the CV. Garuda Mas Motor Binjai. From the data in the previous chapter that has been described as input data for each criterion and value of each alternative, a decision is made in selecting the best mechanic using the SMART method with systematic calculations can help the HRD CV. Garuda Mas Motor Binjai.

To process and obtain the results of the process carried out by the system, click from the analysis menu, it will display the results of the analysis carried out by the system. The results of the analysis process

in selecting the best mechanic using the SMART method with systematic calculations can help HRD CV. Garuda Mas Motor Binjai are as follows.

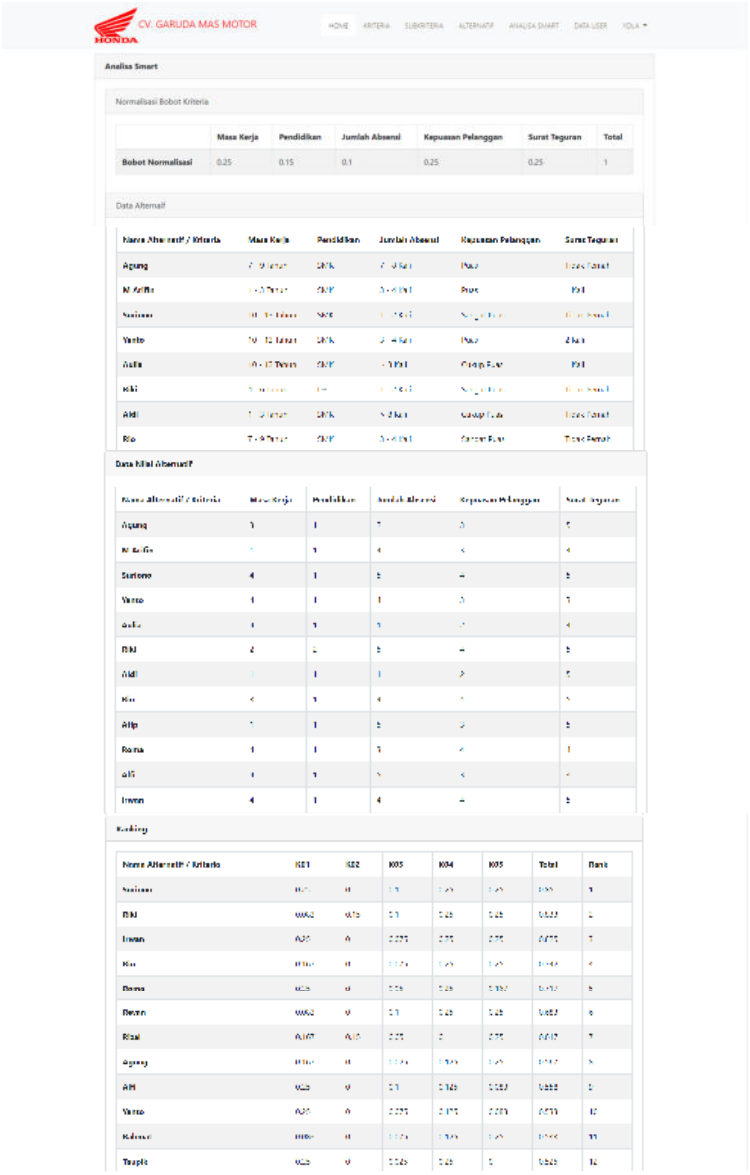

Figure 10. SMART Method Analysis

Furthermore, to print the results of the analysis carried out by the system, you can click *the* print button then the print results will appear as shown in the image below.

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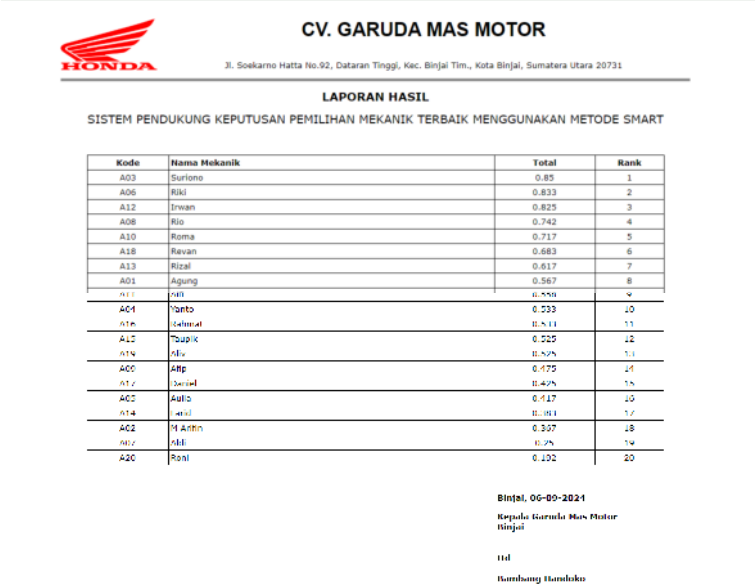

CV. GARUDA MAS MOTOR

Jl. Soekarno Hatta No.92, Dataran Tinggi, Kec. Binjai Tim., Kota Binjai, Sumatera Utara 20731

LAPORAN HASIL

SISTEM PENDUKUNG KEPUTUSAN PEMILIHAN MEKANIK TERBAIK MENGGUNAKAN METODE SMART

Kode	Nama Mekanik	Total	Rank
A03	Suriono	0.85	1
A06	Riki	0.833	2
A12	Irwan	0.825	3
A08	Rio	0.742	4
A10	Roma	0.717	5
A18	Revan	0.683	6
A13	Rizal	0.617	7
A01	Agung	0.567	8
[illegible]	[illegible]	[illegible]	[illegible]
A04	Yanto	0.533	10
[illegible]	[illegible]	[illegible]	[illegible]
A15	Taupik	0.525	12
[illegible]	[illegible]	[illegible]	[illegible]
A09	Alfa	0.475	14
[illegible]	[illegible]	[illegible]	[illegible]
A05	Aulia	0.417	16
[illegible]	[illegible]	[illegible]	[illegible]
A02	M Arfin	0.367	18
[illegible]	[illegible]	[illegible]	[illegible]
A20	Roni	0.192	20

Binjai, 06-09-2024

Kepala Garuda Mas Motor Binjai

Hd

Bambang Hanoloko

Figure 11. Analysis Results Report

Based on the results of the analysis of the 10 alternative data above, it can be seen that the one who obtained the best score or ranking was the mechanic on behalf of Suriono with the results of the analysis using the SMART method 0.85. Thus, Suriono is the best mechanic of CV. Garuda Mas Motor Binjai.

CONCLUSION

The SMART method can be built using the php programming language for the selection of the best mechanic. From the weight value of the criteria for the selection of the best mechanic, it can be applied by using the SMART method in the selection of the best mechanic. Based on the data on the best mechanic selection criteria, the results of the SMART method analysis from the 20 alternative data above, it can be seen that the one who obtained the best score or ranking is the mechanic on behalf of Suriono with the results of the analysis using the SMART method 0.85. thus Suriono is the best mechanic CV. Garuda Mas Motor Binjai. It is hoped that there will be the development of a decision support system for the decision support system for the selection of the best mechanic using the SMART method as a comparison of the results of the analysis that has been carried out. There is an increase in data security, especially in the security of file files uploaded to the system so that their confidentiality is maintained. In the future, researchers can develop even better systems and features, so that this system becomes perfect.

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