

Application Of The AHP Method In A Decision Support System For Used Car Selection Recommendations

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Article Info	ABSTRACT
Keywords: Analytical Hierrchy Process (AHP), Used Car Recommendations, Mobilku Sumut Aceh Showroom.	The selection of used cars often becomes a complicated matter for consumers who lack knowledge about cars. According to the owner of the Mobilku Sumut Aceh showroom, many aspects need to be considered, such as engine condition, year of manufacture, price, and physical condition. This study aims to design a decision support system (DSS) using the Analytic Hierarchy Process (AHP) method to provide recommendations for selecting used cars. The AHP method was chosen for its ability to break down complex problems into a hierarchical structure and compare criteria pairwise to determine priority weights. This analysis allows consumers to adjust their preferences for specific criteria, such as budget or specific features. Based on testing results, this analysis is capable of providing recommendations that match the needs and preferences of consumers, thereby helping them make more targeted and effective decisions. This study is expected to simplify the decision-making process for purchasing used cars for consumers at the Mobilku Sumut Aceh showroom.
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INTRODUCTION

Purchasing used cars is often a choice for some people who want to buy vehicles at more affordable prices or have specific reasons for choosing used cars. Generally, the price of used cars is cheaper than new ones. Various types of used cars are offered at showrooms, such as SUVs, MPVs, Minibuses, and others. An analysis to determine the selection of used cars can assist the Mobilku Sumut Aceh showroom, benefiting both the showroom and its customers. For the showroom, the ability to provide quick information and recommendations can influence customers to make decisions and purchase vehicles promptly, thus benefiting the showroom owner. For customers, this analysis helps them make informed decisions when selecting a used car that meets their needs.

According to Abu, the owner of the Mobilku Sumut Aceh showroom, various brands of used cars are available at the showroom, with the majority being Minibus types. Abu explained that several factors need to be considered when choosing a used car, including price, the physical condition of the vehicle, engine condition, and the year of manufacture.

The Analytic Hierarchy Process (AHP) method is capable of solving complex problems, especially when there are many criteria to consider, unclear problem structures, and uncertainty in the availability of accurate statistical data. The AHP process involves pairwise comparisons between criteria and sub-criteria. The results of these comparisons are then

processed to determine the priority values for each criterion and sub-criterion, leading to more accurate results.

By applying the AHP method, this system is expected to provide recommendations that align with consumer needs, such as budget preferences, vehicle features, and specific physical conditions. This study aims to design and implement a decision support system based on AHP to assist used car showrooms, particularly in the Sumut and Aceh regions, in providing better services to consumers. This analysis is expected to make the process of selecting used cars more effective, efficient, and satisfactory.

METHODS

A Decision Support System

Decision Support System (DSS) is an interactive information system designed to provide information, modeling, and data processing. This system functions as a tool capable of solving problems efficiently and effectively. Its main purpose is to assist in the decision-making process by offering various alternative options derived from information processing using decision-making models

Analytic Hierarchy Process (AHP) Method

Decision Support Systems (DSS) are designed to support all stages of decision-making, starting from identifying the problem, selecting relevant data, determining the approach to be used, and evaluating the decision outcome. DSS employs the concept of programmed and non-programmed decisions, reflecting the principles of modern Decision Support Systems. These systems are computer-based tools aimed at assisting decision-makers by utilizing specific data and models to solve unstructured problems.

Decision-making can become complex due to the involvement of multiple objectives and criteria. One of the most suitable tools for selecting candidates or prioritizing alternatives is the Analytic Hierarchy Process (AHP), developed by Thomas L. Saaty.

In general, decision-making using the AHP method involves the following steps:

1. Defining the problem and determining the desired solution.
2. Constructing a hierarchical structure, starting with the main goal, followed by criteria, and alternative options to be ranked.
3. Creating a pairwise comparison matrix that represents the relative contribution or influence of each element on the elements in the higher level. The comparisons are based on the decision-maker's judgment regarding the importance of one element compared to another.
4. Normalizing the data by dividing each element value in the pairwise matrix by the total value of the respective column.
5. Calculating the eigenvector values and testing their consistency. If the consistency is not met, the data (preferences) collection process needs to be repeated. The eigenvector values, particularly the maximum eigenvalue, can be calculated manually or using software like MATLAB.
6. Repeating steps 3, 4, and 5 for all levels of the hierarchy.
7. Calculating the eigenvector for each pairwise comparison matrix. These eigenvector

values represent the weights of each element and are used to synthesize the priorities of elements in the lowest level of the hierarchy up to the main goal.

8. Testing the hierarchy's consistency. If the consistency ratio (CR) is not below 0.1, the assessment process needs to be repeated.

The AHP method provides a framework for effective decision-making by simplifying and accelerating the process. It breaks down problems into smaller parts, organizes these elements into a hierarchical structure, assigns numerical values to subjective judgments about the importance of each variable, and synthesizes these judgments to determine which variables have the highest priority. This approach helps influence outcomes systematically and structurally in specific situations.

Table 1. Skala Saaty

Intensity of Importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
3	Moderate importance of one over another	Experience and judgment slightly favour one activity over another
5	Essential or strong importance	Experience and judgment strongly favour one activity over another
7	Very strong importance	An activity is strongly favoured and its dominance demonstrated in practice
9	Extreme importance	The evidence favouring one activity over another is of the highest possible order of affirmation
2,4,6,8	Intermediate values between the two adjacent judgements	When compromise is needed

Type of Research

This research falls under the category of quantitative research, as it involves objective data measurement through statistical analysis derived from data provided by showroom owners. The data is processed by responding to a series of questions and analyzed using the Analytical Hierarchy Process (AHP) method.

RESULTS AND DISCUSSION

AHP Hierarchy Structure

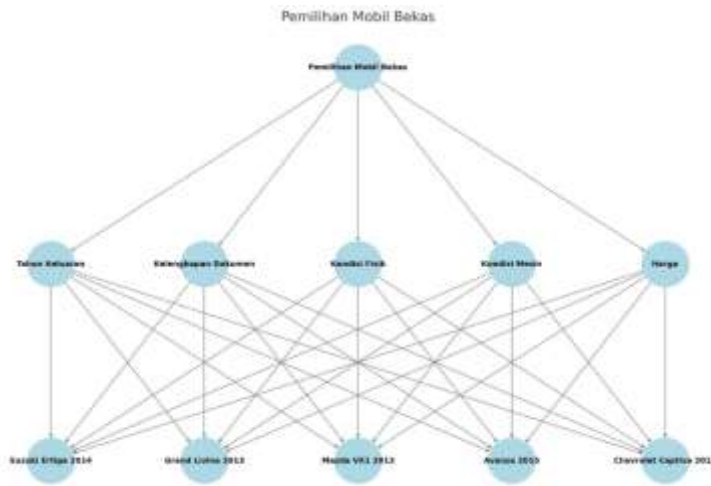


Figure 1. Hierarchy structure of the AHP method

Description:

- a. 5 criteria
 - 1) Year of manufacture (A1)
 - 2) Document completeness (A2)
 - 3) Physical condition (A3)
 - 4) Machine condition (A4)
 - 5) Price (A5)
- b. 5 Alternative
 - 1) Suzuki Ertiga 2014
 - 2) Grand Livina 2013
 - 3) Mazda 2013
 - 4) Avanza 2013
 - 5) Chevrolet 2012

Calculation of Hierarchical Weighting Factors for All Criteria

Table 2. Hierarchical Weighting Factor Matrix for All Criteria

	A1	A2	A3	A4	A5
A1	1	3	5	7	9
A2	1/3	1	3	5	7
A3	1/5	1/3	1	3	5
A4	1/7	1/5	1/3	1	3
A5	1/9	1/7	1/5	1/3	1

Table 3. Simplified Hierarchical Weighting Factor Matrix for All Criteria

	A1	A2	A3	A4	A5
A1	1,000	3.000	5.000	7.000	9.000

	A1	A2	A3	A4	A5
A2	0,333	1,000	3,000	5,000	7,000
A3	0,200	0,333	1,000	3,000	5,000
A4	0,143	0,200	0,333	1,000	3,000
A5	0,111	0,500	0,200	0,333	1,000
Σ	1,786	4,676	9,533	16,333	25,000

Table 4. Normalized Hierarchical Weighting Factor Matrix for All Criteria

	A1	A2	A3	A4	A5	Σ	Vector Eigen
A1	0,560	0,641	0,524	0,428	0,360	2,510	0,502
A2	0,186	0,214	0,314	0,306	0,280	1,290	0,258
A3	0,112	0,071	0,105	0,184	0,200	0,670	0,134
A4	0,079	0,043	0,035	0,061	0,120	0,335	0,067
A5	0,062	0,031	0,021	0,020	0,040	0,170	0,034

The maximum eigenvalue (λ_{max}) can be found by summing the results of multiplying the column sums by the eigenvector. Therefore, the maximum eigenvalue that can be obtained is :

$$\alpha_{max} = (1,786 \times 0,502) + (4,676 \times 0,258) + (9,533 \times 0,134) + (16,333 \times 0,067) + (25,000 \times 0,034)$$

$$= 0,896 + 1,206 + 1,277 + 1,094 + 0,850$$

$$= 5,323$$

$$CI = \frac{\alpha_{max} - n}{n-1} = \frac{5,32-5}{5-1} = \frac{0,323}{4} = 0,080$$

Table 5. Random Index (RI)

n	1	2	3	4	5	6	7	8	9	10
RI	0,00	0,00	0,58	0,90	1,12	1,24	1,32	1,41	1,45	1,49

For n = 5, RI = 1,12 (saaty table) :

$$CR = \frac{CI}{R} = \frac{0,080}{1,12} = 0,07$$

Since CR < 0.100, it means the respondents' preferences are consistent

Calculation of Evaluation Factors for the Year of Manufacture Criterion

Table 6. Evaluation Factor Matrix for the Year of Manufacture Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1	3	2	4	3
Grand Livina 2013	1/3	1	3	2	4
Mazda 2013	1/2	1/3	1	2	3
Avanza 2013	1/4	1/2	1/2	1	5
Chevrolet 2012	1/3	1/4	1/3	1/3	1

Table 7. Simplified Evaluation Factor Matrix for the Year of Manufacture Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1.000	3,000	2,000	4,000	3,000
Grand Livina 2013	0,333	1.000	3.000	2,000	4,000
Mazda 2013	0,500	0,333	1.000	2,000	3,000
Avanza 2013	0,250	0,500	0,500	1.000	5,000
Chevrolet 2012	0,333	0,250	0,333	0,200	1.000
Σ	2,416	5,083	6,833	9,200	16,00

Table 8. Normalized Evaluation Factor Matrix for the Year of Manufacture Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012	Σ	Vector Eigen
Suzuki Ertiga 2014	0,413	0,590	0,292	0,434	0,187	1,646	0,329
Grand Livina 2013	0,137	0,196	0,439	0,217	0,250	1,239	0,247
Mazda 2013	0,206	0,065	0,146	0,217	0,187	0,821	0,164
Avanza 2013	0,103	0,098	0,078	0,108	0,312	0,694	0,138
Chevrolet 2012	0,137	0,049	0,048	0,021	0,062	0,317	0,063

$$\alpha_{\max} = (2,416 \times 0,324) + (5,803 \times 0,247) + (6,833 \times 0,164) + (9,200 \times 0,138) + (16,000 \times 0,063)$$

$$= 0,782 + 1,255 + 1,120 + 1,269 + 1,008$$

$$= 5.434$$

$$CI = \frac{\alpha_{\max} - n}{n-1} = \frac{5,434-5}{5-1} = \frac{0,434}{4} = 0,108$$

For $n = 5$, $RI = 1,12$ (tabel Saaty) :

$$CR = \frac{CI}{R} = \frac{0,108}{1,12} = 0,09$$

Since $CR < 0.100$, it means the respondents' preferences are consistent

Calculation of Evaluation Factors for the Document Completeness Criterion

Table 9. Evaluation Factor Matrix for the Document Completeness Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1	2	3	4	5
Grand Livina 2013	1/2	1	2	3	4
Mazda 2013	1/3	1/2	1	2	3
Avanza 2013	1/4	1/3	1/2	1	2
Chevrolet 2012	1/5	1/4	1/3	1/2	1

Table 10. Simplified Evaluation Factor Matrix for the Document Completeness Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1,000	2,000	3,000	4,000	5,000
Grand Livina 2013	0,500	1,000	2,000	3,000	4,000
Mazda 2013	0,333	0,500	1,000	2,000	3,000
Avanza 2013	0,250	0,333	0,500	1,000	2,000
Chevrolet 2012	0,200	0,250	0,333	0,500	1,000
Σ	2,283	4,083	6,833	10,500	15,000

Table 11. Normalized Evaluation Factor Matrix for the Document Completeness Criterion

	Suzuki Ertiga 2013	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012	Σ	Vector Eigen
Suzuki Ertiga 2014	0,439	0,490	0,439	0,381	0,333	2,082	0,416
Grand Livina 2013	0,219	0,245	0,293	0,286	0,267	1,130	0,262
Mazda 2013	0,145	0,122	0,146	0,191	0,200	0,804	0,161
Avanza 2013	0,110	0,081	0,073	0,095	0,133	0,492	0,099
Chevrolet 2012	0,088	0,061	0,048	0,048	0,067	0,313	0,062

$$\alpha_{\max} = (2,283 \times 0,416) + (4,083 \times 0,262) + (6,833 \times 0,161) + (10,500 \times 0,099) + (15,000 \times 0,062)$$

$$= 0,949 + 1,069 + 1,100 + 1,039 + 0,930$$

$$= 5,087$$

$$CI = \frac{\alpha_{\max} - n}{n-1} = \frac{5,087-5}{5-1} = \frac{0,087}{4} = 0,021$$

For $n = 5$, $RI = 1,12$ (tabel Saaty) :

$$CR = \frac{CI}{R} = \frac{0,021}{1,12} = 0,019$$

Since $CR < 0,100$, it means the respondents' preferences are consistent

Calculation of Evaluation Factors for the Physical Condition Criterion

Table 12. Evaluation Factor Matrix for Physical Condition

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1	3	7	5	2
Grand Livina 2013	1/3	1	5	3	2
Mazda 2013	1/7	1/5	1	1/3	1/4
Avanza 2013	1/5	1/3	3	1	1/2
Chevrolet 2012	1/2	1/2	4	2	1

Table 13. Simplified Evaluation Factor Matrix for the Physical Condition Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1,000	3,000	7,000	5,000	2,000
Grand Livina 2013	0,333	1,000	5,000	3,000	2,000
Mazda 2013	0,143	0,200	1,000	0,333	0,250
Avanza 2013	0,200	0,333	3,000	1,000	0,500
Chevrolet 2012	0,500	0,500	4,000	2,000	1,000
Σ	2,176	5,033	20,000	11,333	5,750

Table 14. Normalized Evaluation Factor Matrix for the Physical Condition Criterion

	Suzuki Ertiga 2013	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012	Σ	Vector Eigen
Suzuki Ertiga 2014	0,459	0,596	0,350	0,441	0,348	2,194	0,439
Grand Livina 2013	0,153	0,199	0,250	0,265	0,348	1,215	0,243
Mazda 2013	0,066	0,040	0,050	0,029	0,043	0,230	0,046
Avanza 2013	0,092	0,066	0,150	0,088	0,087	0,485	0,097
Chevrolet 2012	0,230	0,099	0,200	0,176	0,174	0,880	0,176

$$\alpha_{\max} = (2,176 \times 0,439) + (5,033 \times 0,243) + (20,000 \times 0,046) + (11,333 \times 0,097) + (5,750 \times 0,176)$$

$$= 0,955 + 1,223 + 0,920 + 1,100 + 1,012$$

$$= 5,210$$

$$CI = \frac{\alpha_{\max} - n}{n-1} = \frac{5,210 - 5}{5-1} = \frac{0,21}{4} = 0,052$$

For $n = 5$, $RI = 1,12$ (tabel Saaty) :

$$CR = \frac{CI}{R} = \frac{0,052}{1,12} = 0,046$$

Since $CR < 0,100$, it means the respondents' preferences are consistent

Calculation of Evaluation Factors for the Machine Condition Criterion

Table 15. Evaluation Factor Matrix for the Machine Condition

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1	4	3	2	5
Grand Livina 2013	1/4	1	2	1/2	3
Mazda 2013	1/3	1/2	1	1/3	2
Avanza 2013	1/2	2	3	1	4
Chevrolet 2012	1/5	1/3	1/2	1/4	1

Table 16. Simplified Evaluation Factor Matrix for the Machine Condition Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1,000	4,000	3,000	2,000	5,000
Grand Livina 2013	0,250	1,000	2,000	0,500	3,000
Mazda 2013	0,333	0,500	1,000	0,333	0,500
Avanza 2013	0,500	2,000	3,000	1,000	4,000
Chevrolet 2012	0,200	0,333	0,500	0,250	1,000
Σ	2,283	7,833	9,500	4,083	15,000

Table 17. Normalized Evaluation Factor Matrix for the Machine Condition Criterion

	Suzuki Ertiga 2013	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012	Σ	Vector Eigen
Suzuki Ertiga 2014	0,438	0,511	0,316	0,490	0,333	2,090	0,418
Grand Livina 2013	0,110	0,128	0,211	0,122	0,200	0,770	0,154
Mazda 2013	0,146	0,064	0,105	0,082	0,133	0,530	0,106
Avanza 2013	0,219	0,255	0,316	0,245	0,267	1,300	0,260
Chevrolet 2012	0,088	0,043	0,053	0,061	0,067	0,310	0,062

$$\alpha_{\max} = (2,283 \times 0,418) + (7,833 \times 0,154) + (9,500 \times 0,106) + (4,083 \times 0,260) + (15,000 \times 0,062)$$

$$= 0,954 + 1,206 + 1,007 + 1,062 + 0,930$$

$$= 5.159$$

$$CI = \frac{\alpha_{\max} - n}{n-1} = \frac{5,159-5}{5-1} = \frac{0,159}{4} = 0,039$$

For $n = 5$, $RI = 1,12$ (tabel Saaty) :

$$CR = \frac{CI}{R} = \frac{0,039}{1,12} = 0,035$$

Since $CR < 0.100$, it means the respondents' preferences are consistent

Calculation of Evaluation Factors for the Price Criterion

Table 18. Evaluation Factor Matrix for the Price

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1	5	3	2	4
Grand Livina 2013	1/5	1	2	1/2	3
Mazda 2013	1/3	1/3	1	1/4	2
Avanza 2013	1/2	2	4	1	5
Chevrolet 2012	1/4	1/3	1/2	1/5	1

Table 19. Simplified Evaluation Factor Matrix for the Price Criterion

	Suzuki Ertiga 2014	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012
Suzuki Ertiga 2014	1,000	5,000	3,000	2,000	4,000
Grand Livina 2013	0,200	1,000	2,000	0,500	3,000
Mazda 2013	0,333	0,333	1,000	0,250	2,000
Avanza 2013	0,500	2,000	4,000	1,000	5,000
Chevrolet 2012	0,250	0,333	0,500	0,200	1,000
Σ	2,283	8,833	10,500	3,950	15,000

Table 20. Normalized Evaluation Factor Matrix for the Price Criterion

	Suzuki Ertiga 2013	Grand Livina 2013	Mazda 2013	Avanza 2013	Chevrolet 2012	Σ	Vector Eigen
Suzuki Ertiga 2014	0,438	0,566	0,286	0,506	0,267	2,065	0,413
Grand Livina 2013	0,088	0,113	0,190	0,127	0,200	0,720	0,144
Mazda 2013	0,146	0,057	0,095	0,063	0,133	0,495	0,099
Avanza 2013	0,219	0,226	0,381	0,253	0,333	1,410	0,282
Chevrolet 2012	0,110	0,038	0,048	0,051	0,067	0,315	0,063

$$\alpha_{\max} = (2,283 \times 0,413) + (8,833 \times 0,144) + (10,500 \times 0,099) + (3,950 \times 0,282) + (15,000 \times 0,063)$$

$$= 0,943 + 1,272 + 1,039 + 1,114 + 0,945$$

$$= 5,313$$

$$CI = \frac{\alpha_{\max} - n}{n-1} = \frac{5,313-5}{5-1} = \frac{0,313}{4} = 0,078$$

Untuk $n = 5$, $RI = 1,12$ (tabel Saaty), maka:

$$CR = \frac{CI}{R} = \frac{0,078}{1,12} = 0,069$$

Since $CR < 0,100$, it means the respondents' preferences are consistent

Calculation of Total Ranking / Global Priorities

Table 21. Relationship Matrix between Criteria and Alternatives

	A1	A2	A3	A4	A5
Suzuki Ertiga 2014	0,234	0,416	0,439	0,418	0,413
Grand Livina 2013	0,247	0,262	0,243	0,154	0,144
Mazda 2013	0,164	0,161	0,046	0,106	0,099
Avanza 2013	0,138	0,099	0,097	0,260	0,282
Chevrolet 2012	0,063	0,062	0,176	0,062	0,063

Total Ranking

The next step is to calculate the total ranking for each alternative by multiplying the evaluation factors of each alternative with the weight factors

Table 22. Total Ranking for Suzuki Ertiga 2014

	Faktor Evaluasi	Faktor Bobot	Bobot Evaluasi
Tahun keluaran	0,234	0,502	0,162
Kelengkapan dokumen	0,146	0,258	0,107
Kondisi fisik	0,439	0,134	0,058
Kondisi mesin	0,418	0,067	0,028
Harga	0,413	0,034	0,014
Σ		0,995	

Table 23. Total Ranking for Grand Livina 2013

	Faktor Evaluasi	Faktor Bobot	Bobot Evaluasi
Tahun keluaran	0,247	0,502	0,123
Kelengkapan dokumen	0,262	0,258	0,067
Kondisi fisik	0,243	0,134	0,032
Kondisi mesin	0,154	0,067	0,010
Harga	0,144	0,034	0,004
Σ		0,995	0,236

Table 24. Total Ranking for Mazda 2013

	Faktor Evaluasi	Faktor Bobot	Bobot Evaluasi
Tahun keluaran	0,164	0,502	0,082
Kelengkapan dokumen	0,161	0,258	0,041
Kondisi fisik	0,046	0,134	0,006
Kondisi mesin	0,106	0,067	0,007
Harga	0,099	0,034	0,003
Σ		0,995	0,139

Table 25. Total Ranking for Avanza 2013

	Faktor Evaluasi	Faktor Bobot	Bobot Evaluasi
Tahun keluaran	0,138	0,502	0,069
Kelengkapan dokumen	0,099	0,258	0,025
Kondisi fisik	0,097	0,134	0,012
Kondisi mesin	0,260	0,067	0,017
Harga	0,282	0,034	0,009
Σ		0,995	0,132

Table 26. Total Ranking for Chevrolet 2012

	Faktor Evaluasi	Faktor Bobot	Bobot Evaluasi
Tahun keluaran	0,063	0,502	0,033
Kelengkapan dokumen	0,062	0,258	0,016
Kondisi fisik	0,176	0,134	0,023

Kondisi mesin	0,062	0,067	0,004
Harga	0,063	0,034	0,002
Σ		0,995	0,078

After the calculations have been performed, the results are obtained in each table

1. Suzuki Ertiga 2014 : 0,369
2. Grand Livina 2013 : 0,236
3. Mazda 2013 : 0,139
4. Avanza 2013 : 0,132
5. Chevrolet 2012 : 0,078

Based on the results above, it can be concluded that the recommended order of cars is: Suzuki Ertiga 2014, Grand Livina 2013, Mazda 2013, Avanza 2013, Chevrolet 2012.

CONCLUSIONS

After conducting this research by interviewing the showroom owner, the total ranking of each car brand can be determined, and the priority order can be created based on the total ranking of car brands recommended by the showroom owner, evaluated from:

Urutan	Tahun Keluaran	Kelengkapan dokumen	Kondisi Fisik	Kondisi mesin	Harga
1	Suzuki Ertiga 2014	Suzuki Ertiga 2014	Suzuki Ertiga 2014	Suzuki Ertiga 2014	Suzuki Ertiga 2014
2	Grand Livina 2013	Grand Livina 2013	Grand Livina 2013	Avanza 2013	Avanza 2013
3	Mazda 2013	Mazda 2013	Chevrolet 2012	Grand Livina 2013	Grand Livina 2013
4	Avanza 2013	Avanza 2013	Avanza 2013	Mazda 2013	Mazda 2013
5	Chevrolet 2012	Chevrolet 2012	Mazda 2013	Chevrolet 2012	Chevrolet 2012

Based on the results of testing using the AHP method for recommending used car selection at the Mobilku Sumut Aceh showroom, it can be concluded that the 2014 Suzuki Ertiga ranks first in all existing criteria. Therefore, customers who want to purchase a used car at the Mobilku Sumut Aceh showroom can choose the 2014 Suzuki Ertiga.

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