

## Evaluation of the Competency Test Certification Program in Automotive Engineering to Improve Student Skill Levels

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### Abstract

The purpose of this study was to evaluate the implementation of competency test certification in automotive engineering majors at Vocational High Schools (SMK). This program evaluation research approach is a qualitative method using Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) analysis. The program evaluation design in this study uses the CSE-UCLA model, which has five evaluation components, namely: system assessment, planning, implementation, improvement, and certification. The data collection technique was conducted using a questionnaire. The subjects involved in this study consisted of the principal, curriculum, industrial relations, facilities and infrastructure, head of the automotive engineering program, head of the workshop, automotive productive teachers, potential certification bodies / professional certification bodies in schools. The subjects involved in data collection through questionnaire distribution were five Vocational High Schools in the DKI Jakarta Province area. The technique of determining all subjects using Purposive Sampling technique. The results showed the level of effectiveness of the implementation of the automotive competency test certification program, that all components in the dimensions of the System assessment program were in the good value category, the planning program was in the good value category, the implementation program was in the Fair value category, the improvement program was in the Fair value category, the certification program was in the Fair value category. It can be concluded that the aspects of the System assessment program dimension, program planning category need to be maintained or improved. In the dimensions of the implementation program, the improvement program, the certification program needs efforts to improve the criteria to be better.

**Keywords:** Certification Competency test, Evaluation, Automotive Engineering

### Introduction

Vocational training is an important factor in preparing human resources who will enter the industrial world. Workers who have relevant competencies to work in the industrial world. Digitalization and automation are important components in the industry 4.0 era in supporting industrial processes. Robots supported by artificial intelligence systems can now do all types of work. In line with the rapid development of technology, the current vocational education system must respond to industry needs (Agrawal, 2013). Vocational education today must be able to respond to changing professional demands (Bank, 2014; Mahmudah & Santosa, 2021). It needs innovative planning and appropriate strategies (Boyce & McGowan, 2019). One of the human resource qualifications required by industry

as a corporate investment strategy is that workers have high competence (Green et al., 2016).

Relevant research states that competency-based work tests on industrial practice components, real work competency tests are carried out by production supervisors as external assessors who test students (Suwandi et al., 2022). Liu stated that assessors need to have two competencies, namely assessment management and integrity. This ensures that individuals have the necessary skills to prepare the assessment unit, and secondly ensures that assessors conduct tests objectively (Liu, 2023). The competency test certification process needs to improve quality, theory, and practice in line with the curriculum and based on the needs of industry partners (Murniati et al., 2016). Develop knowledge and competence needs performance tracking based on competency needs (Mas et al.,

2021). The development of competency test certification to determine the impact of the competency test certification program on the performance of student graduates (Nurdianto et al., 2021). The implementation process had several shortcomings in facilities and infrastructure, the number of tools and materials from the test participants. In addition, the psychomotor aspects of test participants are lower than other aspects, this is influenced by not mastering the theory related to competency test certification material (Iskandar & Riyadi, 2022).

The development of professional competency models needs to consider associations and industries to fulfill the needs of the workforce in the industry (Novaliendry et al., 2023). This is so that it is in accordance with the benchmarks of the Indonesian National Occupational Qualification standards (KKNI). In addition, Abdurrahman stated that the competency test evaluation approach uses Discontinuity, where students are given five tasks that must be completed within ten hours and reduces fatigue levels and increases productivity. Another thing, Ambiyar et al., stated, several problems were found such as schools were less ready to plan programs, places and MoUs, not officially inviting out to the industrial world, not all schools had guidance in conducting field projects and schools only measured aspects of student skills after conducting field work projects (Ambiyar et al., 2020).

The system of organizing vocational education in Indonesia has not moved from supply driven to supply demand. Vocational education programs are not flexible to changes in employment needs. Based on data from the Indonesian Central Bureau of Statistics (BPS) regarding the number of unemployed people in Indonesia based on education level in 2020, vocational education graduates are in second place which contributes to the largest number of unemployed people with a percentage of 24% (BPS, 2022). This condition requires a special strategy to ensure that vocational education graduates can enter the job market. One of them is by improving the vocational education system that only focuses on skills without paying attention to understanding theory (literacy), especially applied knowledge literacy in the automotive field. Parkinson stated

that through applied science-based literacy, students can interpret and represent physical objects using diagrams and the development of various complex ideas in technology (Parkinson & Mackay, 2016).

The approach of using Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) analysis elaborated with the CSE-UCLA evaluation model has a complementary purpose for solving the problems that exist in the main objectives of the program. Therefore, in the Applied Knowledge Literacy-Based Automotive Competency Test program in Vocational High Schools, the CSE-UCLA evaluation model introduced by Alkin is classified into five dimensions, namely system assessment, program planning, program implementation, program improvement and program certification (CSE-UCLA) (Alkin & Christie, 2012). system assessment is an evaluation component used to see the initial conditions of the program being evaluated. program planning is an evaluation component used to see various things that might be included to meet program needs. The program implementation component of the evaluation is used to look at the form of socialization carried out to introduce the program to its users. The program improvement component of the evaluation is used to look at the description of the program's functions. Program certification evaluation component which is used to see an overview of the usefulness and value of the program.

#### **Method**

This research uses Mixed method. The research time was from July to September 2022. The research target was purposive sampling of 5 vocational schools in the DKI Jakarta Province area. This qualitative research approach emphasizes understanding the process of collecting data from questionnaires and surveys conducted by interviewers. Combining clustering, optimum matching, and multidimensional filtering techniques are ways to display and summarize recorded data. Therefore, this method to inform the survey adaptively helps outlier data in improving the survey data. The selected samples are the of the principal, curriculum, industrial relations, facilities and infrastructure, head of the

automotive engineering program, head of the workshop, automotive productive teachers, potential certification bodies / professional certification bodies in schools. The questionnaire was made using Likert scale criteria weights for answer choices as in table 1.

**Table 1. Liker Scale Criteria**

Classification	Score
5	Very suitable
4	Suitable
3	Less Suitable
2	Not Suitable
1	Very Unsuitable

Qualitative research on the collected questionnaire data was analysed using the Technique for Others Reference by Similarity to Ideal Solution (TOPSIS) approach (24) stages as follows:

1. Normalized decision criteria matrix (rij), to obtain a normalized decision matrix (R), formulation 1.

$$rij = \frac{x_{ij}}{\sqrt{\sum_{i=1}^m x_{ij}^2}} \quad (1)$$

That's rij is the normalized matrix element of the I object in J criteria.

2. Determining the normalized decision matrix Weighted value.

3. Determine the matrix positive ideal solution and negative ideal solution. Based on the normalized weight ranking, it can determine the positive ideal solution (A) and the negative ideal solution (A), to be able to determine the ideal solution, it must be determined whether the attribute is a benefit or a cost using formula 2.

$$\begin{aligned} A^+ &= (y_1^+, y_2^+, \dots, y_n^+) \\ A^- &= (y_1^-, y_2^-, \dots, y_n^-) \end{aligned} \quad (2)$$

$$y_1^+ = \begin{cases} \max_i y_{ij} & \text{if } j \text{ is a profit attribute} \\ \min_i y_{ij} & \text{if } j \text{ is a cost attribute} \end{cases}$$

$$y_1^- = \begin{cases} \min_i y_{ij} & \text{if } j \text{ is a profit attribute} \\ \max_i y_{ij} & \text{if } j \text{ is a cost attribute} \end{cases}$$

4. Calculating the determination of the range between the values of each alternative using the positive ideal and negative ideal solution matrix with formulas 3 and 4.

$$D_i^+ = \sqrt{\sum_{j=1}^n (y_i^+ - y_{ij})^2} \quad (3)$$

$$D_i^- = \sqrt{\sum_{j=1}^n (y_{ij} - y_i^-)^2} \quad (4)$$

5. Calculate the determination of the value of each alternative with formula 5.

$$V_i = \frac{D_i^-}{D_i^- + D_i^+} \quad (5)$$

The effectiveness score of each evaluated aspect was converted into Guilford's validity classification(Kusmanto et al., 2014). Shown in table 2.

**Table 2. Effectiveness categories referring to Guilford's validity classification.**

Range of effectiveness	Category
0,80 – 1,00	Excellent
0,60 – 0,79	Good
0,40 - 0,59	Fair
0,20 – 0,39	Deficient
0,0 – 0,190	Very poor

Edgar Rodríguez states that the interview as a tool to be analysed shows that the emphasis is on complex narratives, not just comprehensive ways of being to the person experiencing(Rodríguez-Dorans & Jacobs, 2020). Edwards states that it needs to be a series of activities that occur in a particular context(Edwards & Holland, 2020). The dimensions and elements of the questions used in this study are:

1. System Assessment which contains material, a). Urgency of Competency Test b). Benefits of organizing competency tests c). The need for support for competency test management personnel d) Support for all Educational Laboratory Staff (PLP) and school educators for the preparation of equipment, materials, testers, tools for supporting UKK components.

2. The planning program contains material a) Planning the organizational structure of the Competency Test manager b) Planning competency test programs and developing Human Resources (HR) c) Planning student preparation activities in using workshop services d) Planning the preparation of supporting infrastructure for Competency Test organizers.

3. Implementation program contains material a) Socialization of the special

characteristics of the competency test workshop  
 b) Cooperation with certification bodies c) Socialization of measurement / measurement tools needed by the Competency Test workshop.

4. Improvement/Improvement program contains material a) Increased understanding of applied knowledge concepts on tasks/job sheets on worksheets as a basis for procedural work considerations b) Improved facilities and infrastructure for the benefit of competency test certification workshops. c) Increased continuous training programs in aspects of automotive knowledge and practice for improving Human Resources.

5. Certification/Certification contains material a) Quality of Competency Test according to the standards of the automotive mechanic expertise program package. b) Conformity of expertise packages to the standards of the automotive mechanic expertise program package.

**Results And Discussion**

**System Assessment SE Minister of Education and Culture No. 1 of 2021**

The level of effectiveness in the data dimension of the System Assessment SE Minister of Education and Culture No. 1 of 2021, the problems found are components that need to be improved to increase and maintain the effectiveness of the implementation of the Competency Test Certification in the Vocational High School Automotive Mechanic Program. In this case there are 5 Vocational High Schools that are evaluated based on 12 alternative questions resulting. Next, the solution value is determined as in table 3, 4, and 5.

**Table 3. Ranked Preference Values Y**

Y <sub>1+</sub>	Y <sub>2+</sub>	Y <sub>3+</sub>	Y <sub>4+</sub>	Y <sub>5+</sub>	Y <sub>1-</sub>	Y <sub>2-</sub>	Y <sub>3-</sub>	Y <sub>4-</sub>	Y <sub>5-</sub>
0,	0,	0,	0,	0,	0,	0,	0,	0,	0,
1	0	0	0	0	1	0	0	0	0
2	8	3	3	0	3	3	4	2	0
3	7	8	1	9	4	4	6	5	9
8	3	5	3	7	6	9	2	0	7

**Table 4. Ranked Preference Values D**

D <sub>1+</sub>	D <sub>2+</sub>	D <sub>3+</sub>	D <sub>4+</sub>	D <sub>5+</sub>	D <sub>6+</sub>	D <sub>7+</sub>	D <sub>8+</sub>	D <sub>9+</sub>	D <sub>10+</sub>	D <sub>11+</sub>	D <sub>12+</sub>
0	0	0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,	,	,
0	0	0	0	0	0	0	0	0	0	0	0
1	1	1	1	0	1	1	5	3	1	1	1
3	7	2	5	9	2	3	4	8	9	9	8
8	1	2	6	0	9	2	4	4	1	6	0

D <sub>1-</sub>	D <sub>2-</sub>	D <sub>3-</sub>	D <sub>4-</sub>	D <sub>5-</sub>	D <sub>6-</sub>	D <sub>7-</sub>	D <sub>8-</sub>	D <sub>9-</sub>	D <sub>10-</sub>	D <sub>11-</sub>	D <sub>12-</sub>
0	0	0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,	,	,
0	0	0	0	0	0	0	0	0	0	0	0
4	4	4	4	4	4	5	0	1	3	3	3
3	2	3	0	7	3	2	9	8	6	8	8
1	4	9	6	2	6	8	0	6	3	6	8

**Table 5. Ranked Preference Values V**

V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>	V <sub>8</sub>	V <sub>9</sub>	V <sub>10</sub>	V <sub>11</sub>	V <sub>12</sub>
0	0	0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,	,	,
7	7	7	7	8	7	7	1	3	6	6	6
5	1	8	2	3	7	9	4	2	5	6	8
7	2	3	2	9	2	9	1	6	5	3	3
6	6	3	0	6	5	4	8	4	4	1	7

Tables 3, 4 and 5. show the determination of the positive ideal solution (yj+) and negative ideal solution (yj-) followed by the process of calculating the values (Di+) and (Di-). After the values (Di+) and (Di-) are found, the preference value (Vn) is searched so that ranking can be done according to the value.

Based on the results of the calculation of the preference value for each alternative dimension of the System Assessment SE Minister of Education and Culture No. 1 of 2021 that the lowest V value is obtained is the component that needs to be improved in increasing the effectiveness of the implementation of the Competency Test Certification shown in Figure 1.

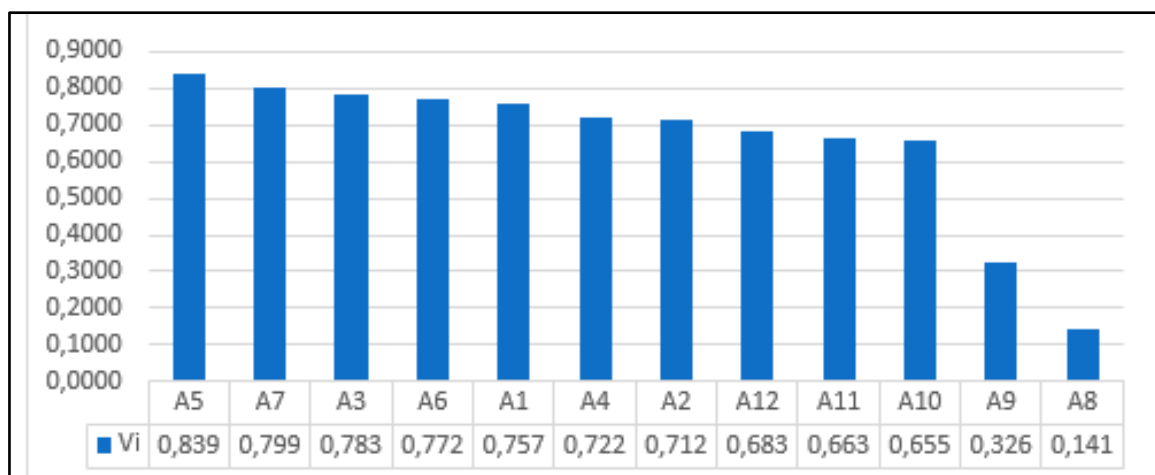


Figure 1. Choice/Preference Value of Each Alternative on the Assessment system Dimension

Based on Figure 1 that the value of determining / determining each alternative obtained the results of the value that needs to be increased to the standard value of very good suitability in the question components A12, A11, A10. In addition, the question components that have a standard value of determination / determinant as an alternative to the standard value of the less category that really needs to be improved to a good standard value on the question components A9, A8. This is the state of the average Assessment System program of all question components of the standard value of the good category. In addition, the component of the infrastructure needs of participants and the implementation team from the Business World and Industry need to be improved. This is based on Fullerton's opinion which states that the development of vocational education is based on the demand of professionals (2). Mahmudah agrees that as a response, it can mean that current vocational education must be able to adapt to shifting demands.

**Program Planning**

The level of effectiveness in the planning dimension at the 5 Vocational High Schools evaluated based on 12 alternative questions. Next, the solution value is determined as in table 6, 7, and 8.

Table 6. Ranked Preference Values Y

Y <sub>1</sub> <sup>+</sup>	Y <sub>2</sub> <sup>+</sup>	Y <sub>3</sub> <sup>+</sup>	Y <sub>4</sub> <sup>+</sup>	Y <sub>5</sub> <sup>+</sup>	Y <sub>1</sub> <sup>-</sup>	Y <sub>2</sub> <sup>-</sup>	Y <sub>3</sub> <sup>-</sup>	Y <sub>4</sub> <sup>-</sup>	Y <sub>5</sub> <sup>-</sup>
0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0	0	0
1	9	3	4	1	6	6	5	2	1
6	2	7	0	3	5	4	7	6	3
1	7	1	0	5	8	9	0	0	5

Table 7. Ranked Preference Values D

D <sub>1</sub> <sup>+</sup>	D <sub>2</sub> <sup>+</sup>	D <sub>3</sub> <sup>+</sup>	D <sub>4</sub> <sup>+</sup>	D <sub>5</sub> <sup>+</sup>	D <sub>6</sub> <sup>+</sup>	D <sub>7</sub> <sup>+</sup>	D <sub>8</sub> <sup>+</sup>	D <sub>9</sub> <sup>+</sup>
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
4	2	4	5	5	5	4	2	3
7	8	5	4	4	3	5	9	1
2	1	2	3	3	7	3	7	2

D <sub>1</sub> <sup>-</sup>	D <sub>2</sub> <sup>-</sup>	D <sub>3</sub> <sup>-</sup>	D <sub>4</sub> <sup>-</sup>	D <sub>5</sub> <sup>-</sup>	D <sub>6</sub> <sup>-</sup>	D <sub>7</sub> <sup>-</sup>	D <sub>8</sub> <sup>-</sup>	D <sub>9</sub> <sup>-</sup>
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
2	3	2	2	2	3	2	5	5
8	6	7	8	8	1	5	2	3
7	6	9	6	6	3	1	8	6

Table 8. Ranked Preference Values V

V <sub>1</sub>	V <sub>2</sub>	V <sub>3</sub>	V <sub>4</sub>	V <sub>5</sub>	V <sub>6</sub>	V <sub>7</sub>	V <sub>8</sub>	V <sub>9</sub>
0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,
3	5	3	3	3	3	3	6	6
7	6	8	4	4	6	5	3	3
8	5	1	5	5	8	6	9	2
3	8	8	2	2	2	2	9	4

Tables 6, 7, and 8. show the determination of the positive ideal solution ( $y_j^+$ ) and negative ideal solution ( $y_j^-$ ) followed by calculating the values of ( $D_i^+$ ) and ( $D_i^-$ ). After the values of ( $D_i^+$ ) and ( $D_i^-$ ) are found, the preference value ( $V_n$ ) is searched so

that ranking can be done according to the value. Furthermore, the preference value calculation can be done, the results of which can be seen in Figure 2.

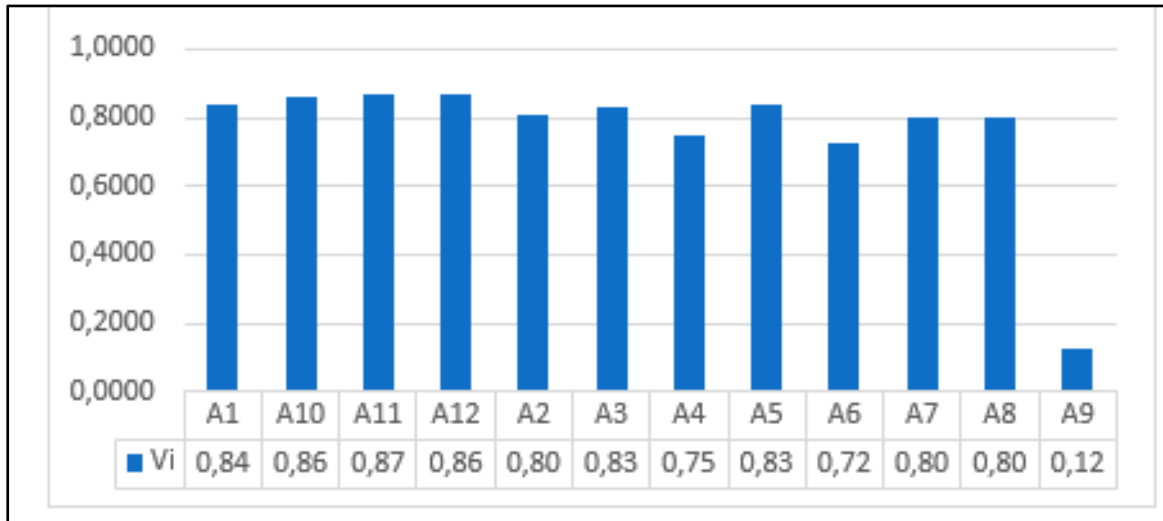


Figure 2. Preferred Value of Each Alternative in the Program Planning Dimension

Figure 2. Shows the results of the calculation of preference values for each alternative dimension of the Planning Program / Planning that the lowest V value obtained is the component that needs to be improved in increasing the effectiveness of the implementation of Competency Test Certification in the Mechanical Machining Program of Vocational High Schools. Alternative value ratings obtained on question components that need to be improved to a very good standard value on question components A4, A6. In addition, the question components that have a standard value of determining / determining as an alternative to the standard value of the category is very lacking in question component A9, it is necessary to increase the category standard in the future to a minimum conformity category standard of Good. The dimension of the planning program has an average value of all question components in the good value category. In the aspect of building learning and training components of understanding applied knowledge in theory and related to the implementation of work practices in the workshop, the value category is very low. Therefore, Rodriguez agrees that the planning standards and organizational assessment involvement as a program initiative carried out on

an ongoing basis are part of program fulfilment (3). In line with Boyce, states planning activities

must design in its approach to goal-based programming (7).

**Program Implementation**

The effectiveness of the Implementation Program dimension, the problem to be found is the components that need to be improved in increasing the effectiveness of the implementation of Competency Test Certification in the Mechanical Machining Program at 5 Vocational High Schools based on 9 alternative questions. Next, the solution value is determined as in table 9, 10, and 11.

Table 9. Ranked Preference Values Y

$Y_1$ +	$Y_2$ +	$Y_3$ +	$Y_4$ +	$Y_5$ +	$Y_1$ -	$Y_2$ -	$Y_3$ -	$Y_4$ -	$Y_5$ -
0,	0,	0,	0,	0,	0,	0,	0,	0,	0,
1	0	0	0	0	1	0	0	0	0
4	9	4	3	1	5	7	5	2	1
0	0	5	6	4	5	5	7	9	4
3	0	7	9	6	9	8	1	5	6

Table 10. Ranked Preference Values D

D	D	D	D	D	D	D	D	D	D
1	2	3	4	5	6	7	8	9	
+	+	+	+	+	+	+	+	+	
0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,
0	0	0	0	0	0	0	0	0	0
1	1	1	0	1	1	2	2	2	
1	3	2	9	6	2	2	2	1	
5	9	6	0	8	1	3	3	1	

D	D	D	D	D	D	D	D	D	D
1	2	3	4	5	6	7	8	9	
-	-	-	-	-	-	-	-	-	-
0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,
0	0	0	0	0	0	0	0	0	0
1	1	1	2	1	2	1	1	1	
7	2	4	2	6	2	1	1	3	
5	4	1	1	3	1	4	4	6	

Table 11. Ranked Preference Values V

V	V	V	V	V	V	V	V	V	V
1	2	3	4	5	6	7	8	9	
0	0	0	0	0	0	0	0	0	0
,	,	,	,	,	,	,	,	,	,
6	4	5	7	4	6	3	3	3	
0	7	2	1	9	4	3	3	9	
4	1	7	1	1	5	8	8	2	
0	2	9	4	7	6	3	3	1	

Tables 9, 10, and 11. show the determination of the positive ideal solution (yj+) and negative ideal solution (yj-) followed by calculating the values of (Di+) and (Di-). After the values of (Di+) and (Di-) are found, the preference value (Vn) is searched so that ranking can be done according to the value of (Di+) and (Di-). Furthermore, the preference value calculation can be done, the results of which can be seen in Figure 3.

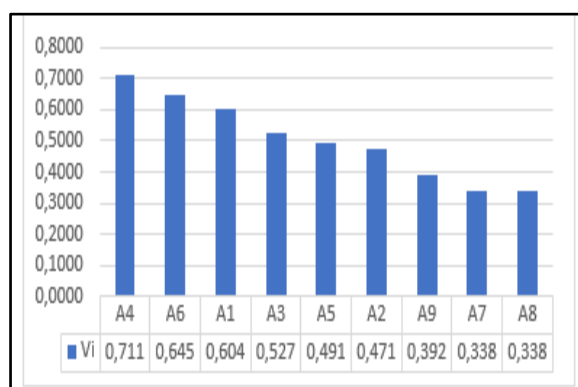


Figure 4. Preferred Value of Each Alternative in the Program Dimension Improvement

Figure 4. shows the results of the calculation of the preference value for each alternative dimension of the Improvement Program that the lowest V value obtained is the component that needs to be improved in increasing the effectiveness of the implementation of Competency Test Certification in the Mechanical Machining Program of Vocational High Schools. The results of the alternative rating value of the good value category in question components A4, A6, A1. The Fair value category in question components A3, A5, A2 needs to increase the value category in future programs to a Good or Very Good value category. In addition, the score category is lacking in question components A9, A7,

A8. Therefore, it is necessary to increase the score category to Fair or Good in the question components. The average value of the improvement program from all question

components is obtained in the Fair value category. This requires an increase in each component of the Improvement program. In line with Santosa, the supervising teacher of productive field training and organizing real work competency tests uses outside assessors who evaluate students(Santosa & Dwi, 2018). According to Rodriguez, associations and industries need to be considered to meet the needs of increasing the knowledge and skills of prospective workers in industry(Rodriguez &

Walters, 2017). According to Wrenn, competency test certification procedures have been implemented, but the quality, theory, and practice need to be improved to match the curriculum and to meet the needs of industrial partners(Wrenn & Wrenn, 2009).

in the Mechanical Machining Program at Vocational High Schools. In this case there are 5 Vocational High Schools that are evaluated based on 6 alternative questions. Next, the solution value is determined as in table 12, 13, and 14.

**Certification**

In the Certification dimension data, the problem to be found is what components need to be improved in increasing the effectiveness of the implementation of Competency Test Certification

**Table 12. Ranked Preference Values Y**

$Y_1^+$	$Y_2^+$	$Y_3^+$	$Y_4^+$	$Y_5^+$	$Y_1^-$	$Y_2^-$	$Y_3^-$	$Y_4^-$	$Y_5^-$
0,1799	0,1082	0,0593	0,0443	0,0201	0,1874	0,0941	0,0650	0,0354	0,0201

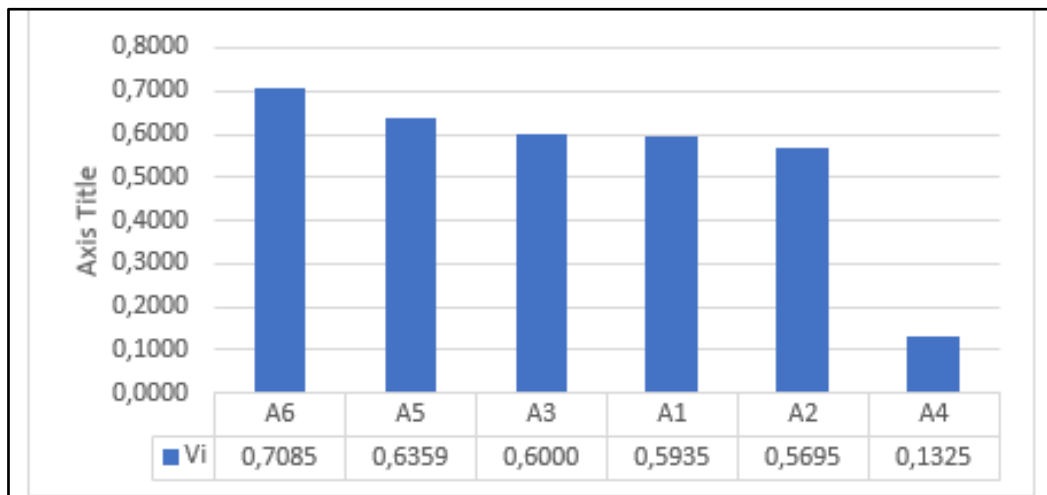
**Table 13. Ranked Preference Values D**

$D_1^+$	$D_2^+$	$D_3^+$	$D_4^+$	$D_5^+$	$D_6^+$	$D_1^-$	$D_2^-$	$D_3^-$	$D_4^-$	$D_5^-$	$D_6^-$
0,009	0,009	0,010	0,018	0,008	0,005	0,013	0,012	0,015	0,002	0,015	0,014
4	6	1	5	8	9	7	7	1	8	4	3

**Table 14. Ranked Preference Values V**

V	V	V	V	V	V
1	2	3	4	5	6
0,	0,	0,	0,	0,	0,
5	5	6	1	6	7
9	6	0	3	3	0
3	9	0	2	5	8
5	5	0	5	9	5

Table 12, 13, and 14. shows the determination of the value of the positive ideal solution ( $y_j^+$ ) and the negative ideal solution ( $y_j^-$ ) followed by calculating the values ( $D_i^+$ ) and ( $D_i^-$ ), after the values ( $D_i^+$ ) and ( $D_i^-$ ) are found, the preference value ( $V_n$ ) is searched so that ranking can be done in order of value. Furthermore, the preference value calculation can be done, the results of which can be seen in Figure 5.



Based on the results of the calculation of the preference value for each alternative dimension of Certification, the lowest V value obtained is the component that needs to be improved in

increasing the effectiveness of the implementation of Competency Test Certification in the Mechanical Machining Program of Vocational High Schools. Graph 5. Shows according to the alternative

ranking value of the good value category in question components A6, A5, A3. This needs to be maintained and increased to Very Good in future certification programs. Fair value categories in question components A1, A2 need to increase the good value category for future program implementation. In addition, the category of insufficient scores in question component A4 needs to increase the score category to Fair or Good in preparation for future program

implementation. The average value of the certification program from all components of the question was obtained as a Fair value criterion. This needs to be improved from each component of the question on the certification program. In line with Budiyanto's opinion, the infrastructure, equipment, and materials of the test participants are all inadequate for the implementation procedure (Prameswari & Budiyanto, 2017). In addition, the test taker-psychomotor component performed worse than other components due to the lack of theoretical mastery of the certification material for the competency test (Budiyanto & Suyanto, 2020). In addition, Muharam to ascertain the effect of the competency test certification program on the performance of graduating students, graduate performance tracking was developed (Muharam & Suryadi, 2022).

### **Conclusion**

The automotive competency test program for certification of lathe/turning automotive expertise needs strengthening related to applied knowledge. Therefore, the competency test program concerns and targets various things in the Vocational High School education program. The competency test program that has been commonly carried out needs to be strengthened/supplemented related to applied understanding whose implementation includes various aspects in program governance related to the quality of graduates who can understand applied knowledge and skills. Qualitative type research in the application of the CSE-UCLA model in each dimension has been carried out by rates / assessments to obtain criteria and alternative values. Therefore, the results of this study can be used as input and additions and complement the automotive

engineering competency test certification program that is commonly carried out in Vocational High Schools.

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