PENGARUH TINGKAT LITERASI KEUANGAN SYARIAH TERHADAP MINAT MASYARAKAT SULAWESI SELATAN DALAM MENGGUNAKAN PRODUK PERBANKAN SYARIAH

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Abstrak

Ahmad Restu Fauzi. 2025. Pengukuran Efisiensi Melalui Pengambilan Keputusan Multi Kriteria pada Pemilihan Unit Kerja Magang Pengguna di Pupuk Kaltim. Skripsi Program Studi Ilmu Manajemen, STIM-LPI Makassar (dibimbing oleh Nurdin Latif dan Hafipah).

Kebijakan Merdeka Belajar Kampus Merdeka (MBKM) memberikan kesempatan kepada mahasiswa untuk belajar di luar program studinya hingga tiga semester, sesuai dengan Permendikbud No. 53 Tahun 2023 tentang Penjaminan Mutu Pendidikan Tinggi. Program ini bertujuan untuk memperluas wawasan mahasiswa dan meningkatkan kompetensinya sehingga lebih siap menghadapi tantangan dunia kerja. Salah satu program unggulan MBKM adalah Magang dan Studi Mandiri Bersertifikat (MSIB) yang memungkinkan mahasiswa memperoleh pengalaman langsung di industri dan mempelajari berbagai keterampilan yang relevan dengan dunia kerja. Program ini diharapkan dapat memperkecil kesenjangan antara keterampilan yang dimiliki mahasiswa dengan kebutuhan industri. Dalam pelaksanaannya, peserta magang akan ditempatkan di suatu unit kerja sebagai pengguna untuk mendapatkan bimbingan selama masa magang. Dengan adanya perbedaan antara satu unit kerja dengan unit kerja lainnya, maka diperlukan suatu pendekatan untuk menilai unit kerja mana saja yang melaksanakan program magang secara efisien agar dapat menjadi acuan bagi unit kerja lainnya. Pendekatan Multicriteria Decision Making (MCDM) dengan metode Data Envelopment Analysis (DEA) diusulkan sebagai solusi atas tantangan tersebut. DEA sebagai salah satu teknik linear programming memiliki keunggulan dalam menangani permasalahan yang kompleks dan fleksibel, serta mampu mengolah data dengan ketidakpastian yang tinggi. Dalam konteks ini, DEA dapat digunakan untuk mengevaluasi efisiensi unit kerja yang menerima peserta magang. Berdasarkan hasil penelitian, ditemukan bahwa dari 15 unit kerja yang berpartisipasi, terdapat 10 unit kerja yang dinyatakan efisien (TE=1) dan terdapat 5 unit kerja yang belum efisien sehingga perlu dilakukan evaluasi kinerja bagi unit kerja tersebut dan sosialisasi yang lebih intensif. Selain itu, diperlukan pula tindakan terkait akses perbankan syariah khususnya di daerah terpencil.

Kata Kunci: Pengambilan Keputusan, Pengukuran Efisiensi, Multi Kriteria, Pengguna.

Abstract

Ahmad Restu Fauzi. 2025*. Efficiency Measurement Through Multi Criteria Decision Making on the Selection of User Internship Work Units at Pupuk Kaltim. Thesis of the Management Science Study Program, STIM-LPI Makassar (supervised by Nurdin Latif and Hafipah).*

The Independent Learning Independent Campus (MBKM) policy provides opportunities for students to study outside their study program for up to three semesters, in accordance with Permendikbud No. 53 of 2023 concerning Quality Assurance of Higher Education. This program aims to broaden students' horizons and improve their competencies so that they are better prepared to face the challenges of the world of work. One of MBKM's flagship programs is the Certified Independent Internship and Study (MSIB), which allows students to gain direct experience in the industry and learn various skills relevant to the world of work. This program is expected to reduce the gap between the skills possessed by students and the needs of the industry.

In its implementation, interns will be placed in a work unit as users to receive guidance during the duration of the internship. With the differences between one work unit and another, an approach is needed to assess which work units are implementing internship programs efficiently to be a reference for other work units.

The Multicriteria Decision Making (MCDM) approach with the Data Envelopment Analysis (DEA) method is proposed as a solution to this challenge. DEA, as a linear programming technique, has advantages in handling complex and flexible problems, and is able to process data with high uncertainty. In this context, DEA can be used to evaluate the efficiency of work units that accept interns. Based on the results of the study, it was found that out of 15 participating work units, there were 10 work units that were declared efficient (TE = 1) and there were 5 work units that were not yet efficient so that a performance evaluation was needed for these work unitss and more intensive information campaigns. Apart from that, action is also needed regarding acces to islamic banking especially in remote areas.

Keywords: *Decision Making, Efficiency Measurement, Multi Criteria, User.*

A. PENDAHULUAN

The Internship Program, organized by the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek), has facilitated tens of thousands of students in gaining industry experience and acquiring relevant competencies. Through this program, students not only enhance their academic knowledge but also develop professional capacities that positively impact their future career prospects (MBKM Team, 2023). The program is designed

to ensure that students can develop competencies aligned with workplace needs through skill development opportunities beyond the campus setting.

By implementing Data Envelopment Analysis (DEA), efficient work units can be identified and serve as models for other units. The results of this evaluation can also form the basis for resource management and strategies for improving the internship program. This approach not only helps enhance the quality of student internships but also contributes significantly to improving the performance and efficiency of internship programs within participating corporate units under the MSIB initiative.

The Multi-Criteria Decision Making (MCDM) method is also relevant as a decision-making approach for selecting the best alternatives based on various criteria. One suitable MCDM method is DEA, which evaluates the relative efficiency of a Decision-Making Unit (DMU) in the context of multi-factor inputs and outputs. With DEA, the performance of interns can be categorized into efficient and inefficient participants. This evaluation is particularly effective in addressing complex issues and uncertainties while offering high flexibility for optimal decision-making in determining efficient work units.

B. LANDASAN TEORI

Theoretical basis

1. *Multi Criteria Decision Making* (MCDM)

Multi-Criteria Decision Making (MCDM) is a systematic approach to solving decision-making problems that involve multiple criteria or dimensions, which often have varying levels of importance and may sometimes conflict. MCDM enables decision-makers to evaluate and select the best alternative from several options by considering all relevant criteria, thus fostering a more comprehensive and transparent decision-making process.

MCDM provides a framework for managing diverse criteria, where alternatives are assessed based on the value of each criterion and the weight assigned to each. This process results in an aggregate score for each alternative, which can then be used to identify the optimal choice (Hwang & Yoon, 1981).

2. *Data Envelopment Analysis* (DEA)

Data Envelopment Analysis (DEA) is a non-parametric linear programming method used to measure the relative efficiency of a group of Decision-Making Units (DMUs) that have multiple inputs and outputs. DEA was first developed by Charnes, Cooper, and Rhodes (1978) to identify the most efficient DMUs by simultaneously comparing their input usage and output production. This method is particularly useful in situations where performance needs to be evaluated based on various inputs and outputs that do not share uniform weights or units (Charnes et al., 1978).

According to Ishizaka (2013), DEA is employed to assess the performance of organizations or entities, known as DMUs, in transforming multiple inputs into outputs. The efficiency score of each DMU is calculated relative to the efficiency frontier. DMUs on the efficiency frontier achieve an efficiency score of 1 (or 100%), indicating optimal performance. In contrast, DMUs below the efficiency frontier have a score of less than 1, suggesting opportunities for future performance improvement. It is important to note that no DMU can have a score greater than 1, as this would exceed the efficiency boundary.

C. METODE PENELITIAN

Types of research

This study employs a quantitative approach with a descriptive-analytical research design. The quantitative analysis focuses on numerical data collected from various work units involved in the Certified Internship and Independent Study Program (MSIB). The research was conducted at one of the largest fertilizer producers in Asia, located in Indonesia. The primary focus of the study is on the work units responsible for managing MSIB internship participants.

The study adopts a descriptive-analytical design using a Multi-Criteria Decision Making (MCDM) approach through the Data Envelopment Analysis (DEA) method. This design was chosen to measure the efficiency of work units in managing internship participants by utilizing various relevant input and output variables. DEA is applied to evaluate the relative efficiency of each work unit based on the available quantitative data.

Location of research

The study was conducted at a company located in Bontang City, East Kalimantan Province.

Framework

The subsequent sections outline the steps taken and the approaches applied in conducting the research. Generally, the research steps include data collection, data processing, data analysis and interpretation, and drawing conclusions..

This research was conducted inductively, building upon information obtained through a literature review to further develop previous studies. Based on the identified problems and objectives, a literature review was carried out to support the completion of the final project by applying a problem-solving framework. The literature review focused on scientific journals, books, and various internet references related to the Delphi method and Data Envelopment Analysis (DEA).

After conducting the preliminary study and literature review, the next stage was data collection. The required data consisted of secondary data, specifically information about MSIB internship participants within the company. This data was subsequently processed using the DEA method.

The analysis and conclusion stages were performed to discuss the ranking of Decision-Making Units (DMUs)—in this case, the internship participants—based on the DEA calculations. This process enabled the identification of priority work units that implement the MSIB internship program efficiently.

Research Variables

The variables used in this study are as follows:

1. Input Variables: These refer to the resources utilized by work units in implementing the internship program, such as the number of mentors, the duration of mentoring, and the facilities provided.
2. Output Variables: These represent the outcomes of the internship program, including the improvement in students' competencies and the results of final evaluations.
3. Efficiency: This is the ratio of output to input, used to measure the extent to which work units effectively utilize resources.

Data Analysis

Applying DEA involves measuring the relative efficiency of each work unit acting as an internship user based on input-output data. This process includes defining the Decision-Making Units (DMUs), executing DEA, and analyzing the efficiency scores for each work unit. Efficiency rankings for the work units are then obtained. Subsequently, the most efficient and less efficient work units are identified. The determination of efficient work units is used to select the optimal work units based on the DEA results and evaluation criteria.

D. HASIL DAN PEMBAHASAN

Research Results

Before processing data using the Data Envelopment Analysis (DEA) method, a recap of the required criteria and data is conducted. In assessing the internship performance of user work units, specific criteria are needed as variable parameters to evaluate efficiency, including:

1. Number of Internship Applicants in Each Work Unit (X1 – Input)
   The total number of individuals who applied for the internship program in a specific work unit during the designated registration period.
2. Number of Applicants Passing Administrative Selection in Each Work Unit (X2 – Input)
   The number of internship candidates who fulfilled all administrative requirements, such as document completeness, educational qualifications, and other technical requirements for a specific work unit.
3. Number of Applicants Passing the Test in Each Work Unit (X3 – Input)
   The total number of candidates who met the passing criteria in selection tests (e.g., written tests, interviews, or skill assessments) for a specific work unit.
4. Average Score of Test-Passing Applicants Per Work Unit (X4 – Input)
   The average score of all candidates who successfully passed the selection tests for a specific work unit, calculated based on the scores assigned by the evaluation team.
5. Number of Selection Team Members from User Work Units (X5 – Input)
   The total number of individuals serving on the selection team (including administrative reviewers, test assessors, and interviewers) from a specific work unit.
6. Average Age of Participants in Each Work Unit (X6 – Input)
   The average age of participants accepted into the internship program in a specific work unit.

7. Average GPA of Participants in Each Work Unit (X7 – Input)
   The average Grade Point Average (GPA) of all accepted internship participants in a specific work unit.
8. Number of Mentors Required in Each Work Unit (X8 – Input)
   The number of mentors needed to guide and evaluate the performance of internship participants in a specific work unit, calculated based on the predetermined participant-to-mentor ratio.
9. Total Mentor Honorarium Required in Each Work Unit (X9 – Input)
   The total honorarium required to compensate mentors in each work unit during the internship program.
10. Total Project Value Produced by Participants in Each Work Unit (Y1 – Output)
    The total value (either in the form of scores or financial metrics) generated from the projects completed by internship participants in a specific work unit during the internship program.
11. Average Achievement of Internship Participants' KPI Targets in Each Work Unit (Y2 – Output)
    The average percentage of Key Performance Indicator (KPI) target achievement by internship participants in a specific work unit.

Discussion

After processing the data using software, the following recapitulation of results was obtained:

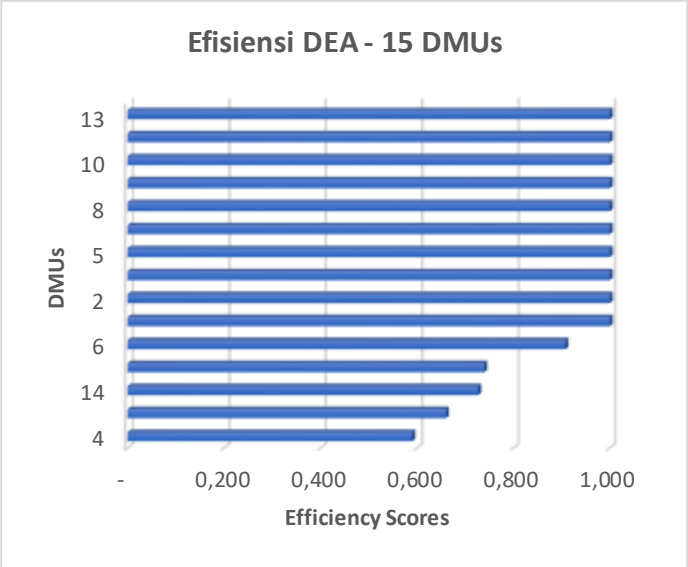
Tabel 4.3 Data Processing Results Recap

DMU	*SBM (Objective)*	X1 *Slack*	X2 *Slack*	X3 *Slack*	X4 *Slack*	X5 *Slack*	X6 *Slack*	X7 *Slack*	X8 *Slack*	X9 *Slack*
1	1	-	-	-	-	-	-	-	-	-
2	1	-	-	-	-	-	-	-	-	-
3	1	-	-	-	-	-	-	-	-	-
4	0,590	19,160	3,230	0,680	17,332	2,170	3,240	1,016	4,170	3.127.500
5	1	-	-	-	-	-	-	-	-	-
6	0,908	9,880	2,140	1,240	2,176	0,060	0,320	0,226	0,060	45.000
7	1	-	-	-	-	-	-	-	-	-
8	1	-	-	-	-	-	-	-	-	-
9	1	-	-	-	-	-	-	-	-	-
10	1	-	-	-	-	-	-	-	-	-
11	1	-	-	-	-	-	-	-	-	-

12	0,660	32,572	12,976	0,432	11,916	2,083	0,332	0,523	1,083	812.449
13	1	-	-	-	-	-	-	-	-	-
14	0,727	8,301	14,329	-	3,191	1,844	3,154	0,461	0,844	633.224
15	0,740	43,840	13,520	2,320	13,478	1,080	1,260	0,362	0,080	60.000

Tabel 4.4 Efficiency Score Ranking

Rank	DMU	SBM (*Objective*)
1	1	1
2	2	1
3	3	1
4	5	1
5	7	1
6	8	1
7	9	1
8	10	1
9	11	1
10	13	1
11	6	0,908
12	15	0,740
13	14	0,727
14	12	0,660
15	4	0,590



The Decision-Making Units (DMUs) that have not reached optimal conditions based on the Slack-Based Measure (SBM) model in Data Envelopment Analysis (DEA) are analyzed. Any DMU with an efficiency score (objective) less than 1 is examined based on the slack or excess resources that can be optimized, as follows.

1. 4th DMU (Dept. Istek-2)

Tabel 4.5 4th DMU Performance Evaluation

Variabel	*Slack*
X1	19,16
X2	3,23
X3	0,68
X4	17,33
X5	2,17
X6	3,24
X7	1,016
X8	4,17
X9	3.127.500

Recommendations that can be given to make the work unit efficient include:

a. Reduce the number of applicants (X1) to reduce excess resources.
b. Improve the administrative selection process (X2) to be more effective.
c. Evaluate the number of test participants (X3) to suit the needs of the work unit.

2. 6th DMU (Dept. Bengkel)

Tabel 4.6 6th DMU Performance Evaluation

Variabel	*Slack*
X1	9,880
X2	2,140
X3	1,240
X4	2,176
X5	0,060
X6	0,320
X7	0,226
X8	0,060
X9	45.000

Recommendations that can be given to make the work unit efficient include:

a. Reduce the number of applicants (X1) to reduce excess resources.
b. Improve the administrative selection process (X2) to be more effective.
c. Evaluate the criteria for the number of test participants (X3) to suit the needs of the work unit.
d. Evaluate the test score criteria (X4) to suit the needs of the work unit.

3. 12th DMU (Dept. Operasi Pabrik 7)

Tabel 4.7 12th DMU Performance Evaluation

Variabel	Slack
X1	32,57
X2	12,98
X3	0,43
X4	11,92
X5	2,08
X6	0,33
X7	0,52
X8	1,08
X9	812.449

Recommendations that can be given to make the work unit efficient include:

a. Optimize the number of team members (X5) to be more efficient.
b. Evaluate the average age of participants (X6) to increase the relevance of applicant profiles.
c. Make adjustments to the number of mentors (X8) to avoid excess capacity.

4. DMU ke-14 (Dept. Proses & Pengelolaan Enegi)

Tabel 4.8 14th DMU Performance Evaluation

Variabel	Slack
X1	8,3
X2	14,33
X4	3,19
X5	1,84
X6	3,15
X7	0,46
X8	0,84
X9	633.224

Recommendations that can be given to make the work unit efficient include:

a. Reduce the number of administrations (X2) to increase process efficiency.
b. Re-evaluate the test score standards (X4) to suit research needs.
c. Adjust the mentor honorarium budget (X9) to the realization of needs.

5. 15th DMU ke-15 (Dept. Lingkungan Hidup)

Tabel 4.9 15th DMU Performance Evaluation

Variabel	Slack
X1	43,84
X2	13,52
X3	2,32
X4	13,48
X5	1,08
X6	1,26
X7	0,36
X8	0,08
X9	60.000

Recommendations that can be given to make the work unit efficient include:

a. Reduce the number of applicants (X1) to be more in line with capacity.
b. Increase the effectiveness of administrative selection and tests (X2, X3) for resource efficiency.
c. Optimize mentor honorarium costs (X9) based on the needs of the work unit.

E. KESIMPULAN

Based on the research that has been conducted, the following conclusions can be drawn.

1. The performance criteria of the work unit as an internship user that can be determined as the basis for evaluation are the number of internship applicants in each work unit, the number of applicants who pass the administrative selection in each work unit, the number of applicants who pass the test in each work unit, the average score of participants who pass the test per work unit, the number of selection teams from the user work unit, the average age of participants in each work unit, the average GPA of participants in each work unit, the average GPA (Cumulative Achievement Index) of all internship participants accepted in a particular work unit, the number of mentors needed in each work unit, the amount of mentor honorarium needed in each work unit, the amount of project value worked on by participants in each work unit, and the average achievement of KPI targets for internship participants in each work unit.
2. The user work units that have efficient performance in managing internship participants are the PSDMO Dept., TJSL Dept., Manufacturing Dept., K3 Dept., Port & Shipping Dept., Reliability Dept., Operations Comp. 1, Dept. Factory Operation 1A, Factory Operation Dept. 4, and Research Dept. The user work units whose internship management is not yet efficient are the Istek 2 Dept., Workshop Dept., Factory Operation Dept. 7, Process & Energy Management Dept., and Environment Dept., so their performance needs to be improved regarding the management of internship participants.

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