# SELECTING THE BEST TRANSPORTATION VENDOR USING ELECTRE I METHOD FOR THE BULK PRODUCTS DELIVERY TO THE EXTERNAL TANK

## UNDERGRADUATE FINAL PROJECT

**Submitted as one of the requirements to obtain Sarjana Teknik (S.T.)**


**By**

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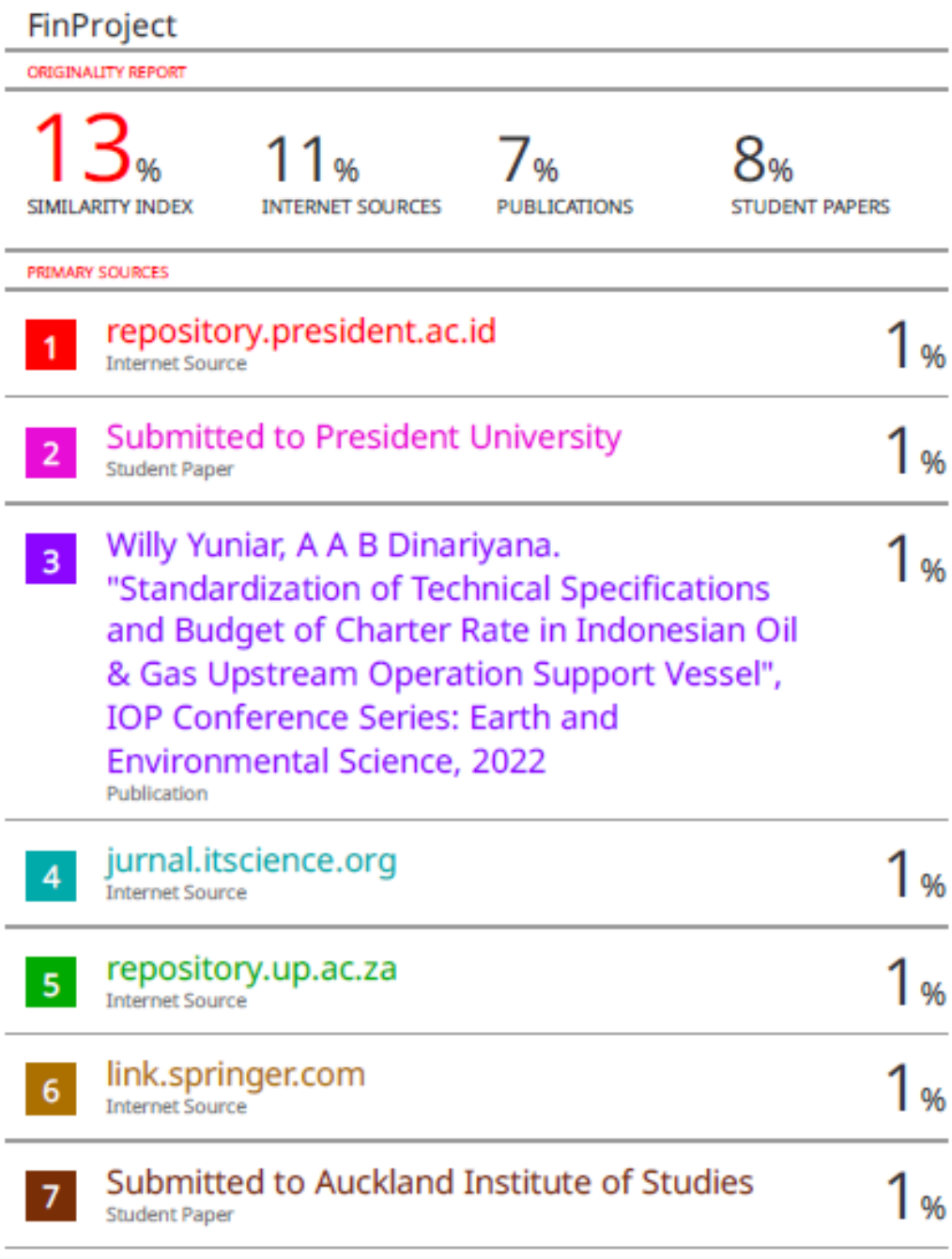

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## ABSTRACT

In the process of delivering bulk products to the external tank at PT D, PT ABC uses the services of a tank truck transportation vendor. On the way from PT ABC to PT D, the distance traveled was almost 50 km and there was only the driver, no one from the vendor or company accompanied him. In the vendor selection process, the company only uses the Aanwizjing process, which is a question and answer process. The company has also never assessed vendors using specific criteria. Therefore, due to product losses during delivery and PT ABC experiencing a loss of 10-30 million rupiah per month due to the losses quantity. PT ABC evaluates vendor performance. However, in the process of taking the value of vendor performance evaluation, several criteria and criteria weights related to the world of logistics are needed. Therefore, this research uses the ELECTRE method to determine the appropriate assessment criteria to evaluate the performance of this transportation vendor. Based on the results of user assessments, calculations will continue using the ELECTRE method. After analyzing using the ELECTRE method in selecting the best vendor, PT IMS, CV FSG, PT SJT get a final score of 0, while PT SKBA gets a final score of 1, and PT DRM, CV BRT, PT KPBN get a final score of 2. Therefore, from the results of the analysis using the ELECTRE method, the three best vendors have been obtained, namely PT DRM, CV BRT, PT KPBN.



Keywords: *Logistics, Transportation, Vendor, Vendor Selection, MCDA, ELECTRE.*

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## LIST OF TERMINOLOGIES

| | | |
|---|---|---|
| ELECTRE I | : | ELECTRE means "Elimination Et Choix Traduisant la Realite," multicriteria decision-analysis approach that incorporates the idea of outranking. |
| Concordance | : | Concordance preference over numerous assessment benchmarks. |
| Discordance | : | Discordance preference under any optional benchmark. |
| Treshold | : | The value helps to create the dominance matrix for concordance and discordance result. |
| Aanwizjing | : | The Aanwizjing process is a process of explanation and questions and answers from the TOR (Terms of Reference) given to the vendor. |
| TOR | : | The Terms of Reference contain notes that will be asked by the vendor during the Aanwizjing process. |
| Matrix Normalization | : | The results of the calculation of each alternative according to the criteria. |
| Aggregate Matrix | : | Combination of Concordance and Discordance Dominance Matrix results. |
| Geometric Mean | : | A kind of average in which the numbers are multiplied collectively, and the square root for two, cube root for three, and so on, are then calculated. |