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The Influence of EMU Driver Education and Training on Train Driver Competency Indonesian High Speed Rail "Whoosh"

Handoko[1], Atik Siti Kuswati[2], Nanda Ahda Imron[3], Alfian Yuda Prasetiyo[4]

[1234]Indonesian Railway Polytechnic,
Jl. Tirta Raya Kota Madiun

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ABSTRACT (10 PT)

The Jakarta Bandung High Speed Train is a mass transportation that is a long-term permanent solution that is expected to overcome road traffic congestion on urban roads and roads to Bandung, two areas that are projected in the future to become megapolitan areas, roads in the surrounding area, reduce carbon emissions and air pollution, as well as effective steps to shift private vehicle users to mass transportation effectively (Ministry of Transportation, 2022). In order to increase the competence of the crew of fast train railway facilities, PT Kereta Cepat Indonesia China (PT.KCIC) in collaboration with the Indonesian Railway Polytechnic in Madiun organized EMU Driver education and training. The following is the number of EMU Driver education and training participants who do not yet have a certificate of competence for the crew of fast train railway facilities. While the questionnaire results on the Railway Suggestion crew competency variable are also dominated by answers agreeing or with an average of 82.99%. With these results it can be interpreted that after attending EMU Driver education and training affects the Competence of the Railway Facilities Crew where the results of the regression analysis obtained Y21.323 + 0.412. The intercept value is 21,323 which means that without the X variable, the competence of the crew of the railway facilities remains the value, namely 21,323. The t test data has a t count of 5.821 while the t table at the 5% level for 32 respondents is 2.014. Because t count t table then Ho is rejected and Ha is accepted. with a significance value of 0.000 (0.0000.05) This can be interpreted that EMU Driver education and training has a positive and significant effect on the competence of the crew of railway facilities.

Corresponding Author:

Handoko
Department of Railway Management, Indonesian Railway Polytechnic
Jl. Tirta Raya, Pojok, Nambangan Lor, Manguharjo, Madiun, Jawa Timur 63161, Indonesia
Email: handoko@ppi.ac.id

1. INTRODUCTION

The development of the Jakarta-Bandung High Speed Rail (HSR) can shift transportation modes from conventional to HSR, thereby reducing congestion and supporting economic growth. Bappenas has carried out the Jakarta-Surabaya Pre-FS-HSR study. According to the study, the main station locations are planned in five areas: Jakarta, Bandung, Cirebon, Semarang, and Surabaya. In Book II of the 2015-2019 RPJMN, it is stated that there is a need to develop a modern and advanced mass public transportation system with a bus and rail orientation and equipped with the latest modal transfer facilities. HSR development is aimed at areas with per capita incomes reaching US$10,000. For the next 5 years, both Jakarta and Bandung are predicted to be able to achieve income above this value. Why was Jakarta-Bandung chosen first? Because the corridor's regional economic growth is extraordinary.

The Jakarta-Bandung High Speed Rail (HSR) is mass transportation, which is a longterm permanent solution that is expected to be able to overcome road traffic jams on urban roads and roads to Bandung, two areas that are projected to become megapolitan areas in the future, roads in the surrounding regions, reducing carbon emissions and air pollution, as well as effective steps to effectively shif people using private vehicles to mass transportation (ministry of Transportation, 2022).

In order to increase the competency of the High Speed Rail Train Driver. The Indonesian China High Speed Rail (HSR) PT. KCIC collaborates with the Indonesian Railway Polytechnic to prive EMU driver education and training. The following is the number of EMU driver education and training participants who do not yet have a competency certificate for High Speed Rail Train Driver.

2. LITERATURE REVIEW

2.1. Education and Training

Education and training, especially in the field of transportation, have their own meaning. Transportation education and training is the implementation of learning and training processes in order to increase knowledge, expertise, skills, and the formation of attitudes and behaviors of human resources needed in the implementation of transportation. (Government Regulation Number 51 of 2012). Transportation Education and Training is an integral part of the National Education System; its development is carried out jointly by the Minister and the Minister, who handles government affairs in the education sector. Transportation education and training in the railway sector is carried out in an integrated manner between the government, provincial government, district/city government, and the community evenly throughout the country. Human resources in the transportation sector must have competency in the transportation sector in accordance with the type of competency determined for the position or job being carried out in the transportation sector. Competencies are obtained after attending Transportation Education and Training in accordance with the field and the type of competency determined by the Minister. Ministries, provincial governments, district and city governments, and the community can organize transportation education and training. Organizing transportation education and training is required to obtain permission to establish a transportation education and training institution from the government or regional government in accordance with its authority. The establishment permit is granted after the implementation of Transportation Education and Training has received approval from the Minister. In giving approval, the minister must at least consider: infrastructure and facilities for organizing transportation education and training; fulfillment of educators and education personnel; and curriculum and syllabus.

According to (Hasibuan, 2010) education and training is a process to improve the theoretical, conceptual and moral skills of labor employees, workers whi receive education and training tend to work skillfully when compared to employees who do not receive education and training.

2.2. Competency

The definition of competency in statutory regulations generally refers to the abilities, skills, knowledge, and behavior required to carry out tasks or work effectively and professionally. The emphasis on competence in various fields shows the importance of mastering specific skills and knowledge to achieve optimal performance. Competency is also often associated with the ability to adapt, develop oneself, and work effectively in a team or organization.

Competencies are the abilites and characteristics possessed by a person in the form of set of knowledge, skills, and behvior that must be respected and mastered to carry out professional duties (amandment

to Minister of Transportation Regulation No. 4 of 2017 concering ASP Proficiency Certification, 2023). Meanwhile, a competency certificate is proof of a person's abilites and characteristics, in the form of a set of knowledge, skills, or expertise, as well as behavior that must be internalized and mastered to carry out professional duties (PM. 7 of 2022 concerning the implementation of high speed rail).

A. Train Driver Competency Standards

After participating in a series of educational and training activities, the train driver has competence according to their level. According to the Minister of Transportation Regulation Number7 of 2022 concerning the Implementation of High Speed Rail, High Speed Rail facility crews are divided into three levels, namely:

1) The competency of the basic level high speed train driver.
   a) Understand the laws and regulations related to the operation of railway facilities;
   b) Understand safety procedures in carrying out work;
   c) Understand traffic procedures in operating railway facilities during switching;
   d) Assessing the railway facilities as ready to operate;
   e) Operate railway facilities in switching activities in accordance with standard operating procedures;
   f) Implement standard operating procedures for the operating of railway facilities during shunting activities;
   g) Implement standard technical and administrative operating procedures in shunting activities;
   h) Implement standard operating procedures for signalling. Telecommunications and electrical installations in the operation of railway facilities during switching;
   i) Read and understand GAPEKA;
   j) Interpret shunting acticity areas in the operation of railway facilities;
   k) Communicate well with train management and control officers;
   l) Apply knowledge, skills, and attitudes in operating railway facilities while on duty;
   m) Overcome emergency response conditions on railway facilities;
   n) Know and be able to anticipate the risk of accidents.
2) The competency of the advanced level high speed train driver.
   a) Meet the competency standards required for Basic Level High Speed Rail Drivers;
   b) Understand traffic procedures in the operation of railway facilities on service lines;
   c) Implement standard operating procedures for the operation of railway facilities during stopping and running and/or shunting;
   d) Implement standard technical operating procedures and train travel administration;
   e) Implement standard operating procedures for signalling, telecommunications and electrical installations in the operation of ralway facilities;
   f) Interpreting cross-services in the operation of railway facilities;
   g) Communicate well with ifficers regulating and controlling train travel, as well as sections related to inspection and maintenance work of railway facilities; and
   h) Make decisions quickly and accurately, both in normal and abnormal conditions in accordance with operational procedures.
3) The competency of the proffesional level high speed rail train drivers.
   a) Meet the competency standards required for advanced level high speed rail drivers;
   b) Plan the work procedures of lower level high speed rail drivers;
   c) Evaluate the performance of lower level high speed rail drivers;
   d) Have the ability to develop and determine the official schedule for a high speed rail driver at a lower level.

B. Train Drivers Proficiency Certificate

   a) Train Drivers are people assigned to a high speed rail by the railway facilities operator during a high speed rail journey;
   b) Train drivers are train drivers who are tasked with operating high speed trains and are responsible for leading high speed rail.

Train drivers who operate high speed rail or similar facilities and/or special equipment facilities must have a train drivers profeciency certificate. To obtain a train drivers proficiency certificate, must meet the following requirements; certificate of completion of education and training and pass the eduation and training competency test.

3. RESEARCH METHOD

3.1 Population and Sample

In this study, the research population will be all 32 EMU Driver education and training participants and will be used as the entire sample. The sampling technique used was saturated sampling technique. Saturated sampling is a technique for determining the sample size if all members are used as samples. This is done because the population is considered small or less than 100.

3.2 Data Analysis Technique

In this research, the author uses a quantitative research method, namely a research method using data in the form of numbers and analysis that uses statistics to draw conclusions from hypothetical problems. The data analysis technique used is quantitative descriptive analysis, namely data analysis in the form of numbers, percentages, frequencies, averages, diagrams, or graphs where descriptive statistics can be used to process.

3.3 Research Variable Paradigm

According to Sugiyono (2014:08), a research paradigm is defined as a mindset that shows the relationship between the variables to be studied, which also reflects the type and number of problem formulations that need to be answered through research. In this research paridgm, there are two independent variables and one dependent. Variable X is education and training and variable Y is competence of train drivers. To find relationhsip between X and Y, use a simple correlation technique.

4. RESULTS AND DISCUSSION

3.1. Demographic

Based on respondent characteristics all EMU driver education and training participants are male. Respondent aged 21-30 were 4 people with a percentage of 13%, and those aged 31-40 were 28 people, or 88%. Meanwhile, ages 41-50 were not found. For respondent, the last education level was high school; there were 29 people with a percetage of 97%. And there was 1 diploma 3 education with a percentage of 3%, while there was no bachelor's degree education. This shows that employees of PT. KCIC or participants who take part in EMU driver education and training are dominated by high school level graduates. Based on years of work as train drivers, there were 8 respondents from 3-10 years with a percentage of 25% and 11-20 years with as many as 24 people with a percentage of 75%, while there was no work experience as a train drivers of more than 21 years.

3.2. Realibility and t-test

Equations and formulae should be typed in Mathtype, and numbered consecutively with Arabic numerals in parentheses on the right hand side of the page (if referred to explicitly in the text). They should also be separated from the surrounding text by one space.

Table 1. Reliability Test

Variabel	Cronbach Alpha	Keterangan
Education and Training	0,864	Reliabel
Competence	0,850	Reliabel

After comparing the calculated r value and the r table, it is known that the calculated cronbach alpha r value for variable X is 0.864 > 0.349. Meanwhile, variable Y is 0.850 > 0.349. significance level of α 5%, the statemen instrument is declared valid and can be used as an instrument for measuring data in this research.

The results of the questionnaire on the EMU driver education and training variable were dominated by agreeable answers, with an average of 76.74%. these results mean that the implementation of EMU driver education and training is considered positive. Meanwhile, the results of the questionnaire on the train drivers

competency variable were also dominated by agreeable answers, with an average of 82.99%. with these results, it can be intrepeted that after attending EMU driver education and training, it influences the competency of the train drivers. The results of the regression analysis obtained Y = 21.323 + 0.412.

The intercept value is 21.323, which means that without the variable X = 0, the competency of the train drivers remains at 21.323. T test data has a calculated t of 5.821, while for the t table at the 5% level for 32 respondents, it is 2.014. because t count > t table, Ho is rejected, and Ha is decalred accepted. With a significance value of 0.000 (0.000<0.05). This can be intrepreted as meaning that EMU driver education and training have a positive and significant influence on the competency of train drivers.

5. CONCLUSION

Based on the results of the data analysis and discussion in this research, it can be concluded that the results of the data analysis and discussion show that there is an influence between the EMU driver education and training variables and the competency variable of the train drivers, which is based on the calculation of the coefficient of determination, or R squared (R2), which is 0.512, or 51%, while 49% is influenced by other variables not studied, such as employee performance, motivation, compensation, and others. Apart from that, providing EMU Driver education and training is necessary because to obtain a proficiency certificate, train drivers are required to undergo education and training first.

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