

# The Effect of Motivation and Work Environment on the Effectiveness through Mediation of Rolling Stock Tester Competency at the Directorate General of Railways in 2022

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**Abstract:-** Evaluation of employee work motivation and work environment during facility testing competence are determining factors toward work effectiveness. As such, there are necessary efforts to increase facility testing competence. The research was conducted in Directorate General of Railways with sample amounting to 70 employees. Data was gathered through instrument in form with tested Likert scale . The used data analysis method is path analysis . First research result found that employee work motivation has positive and significant correlation towards facility testing competence. Therefore, it can be concluded that work environment has positive and significant correlation towards facility testing competence. Relevant employee work motivation and work environment in facility testing competence has effects to increase work effectiveness, thus facility testing competence as intervening variable is proved to improve employee work motivation and work environment towards work effectiveness.

**Keywords:-** Employee work motivation, work environment, facility testing competence, work effectiveness.

## I. INTRODUCTION

Railways as one of the parts of land transportation, are one of the most important elements in the development of mass transportation and the development of the Indonesian economy. Along with its development, the process of modernization and development of infrastructure must continue to be improved both in terms of the quantity of stations in each region and the quality of service. The quality of railway services plays an important role in the trust, safety and comfort of railway service users. In terms of the safety of the operation of railway facilities, the government through regulations requires that every operating railway facility must meet the eligibility in accordance with its technical requirements and technical specifications. Railway facilities are vehicles that can move on rail roads, consisting of locomotives, trains, carriages and special equipment. Railway facilities are declared operationally feasible if they are declared to have passed the first or periodic tests and have a certificate. In this case, of course, decent human resources are needed in terms of the assessment.

The role of the railway facilities examiner in an effort to ensure the safety and continuity of railway administration is to carry out an inspection of the operational feasibility of the railway through testing railway facilities. This test was carried out on the types of locomotive facilities, KR, KRL, locomotive pulled trains, carriages and special equipment. In Law 23 of 2007 concerning Railways, it is stated that all railway human resources involved in the operation, maintenance, inspection and testing of facilities must have technical qualifications in their respective fields and these human resources must attend technical education and training before obtaining a certificate of proficiency or a certificate of expertise. This is also regulated in the Regulation of the Minister of Transportation PM. 87 Of 2018 concerning Certification of Railway Infrastructure Examiners and Railway Facilities Examiners. The railway facilities examiner consists of first-level examiners, young-level examiners and intermediate-level examiners. One of the roles of the Directorate General of Railways is to certify the eligibility of railway facilities, the testing of which is delegated to the Railway Testing Center. But in reality, not all examiners who have a certificate of competence are placed in the Railway Testing Center.

The distribution of facility examiners includes facility examiners with the status of Non-Civil Servant Government Employees (PPNPN) at the Railway Testing Center who received competency certification in 2017 and 2018. In accordance with PP 49 of 2018 concerning Management of Government Employees with Employment Agreements, it is mandatory that the status of PPNPN staffing within Government Agencies until November 28, 2023 be deleted. This vagueness of staffing status affects employee motivation.

The working environment in testing facilities currently has 2 (two) places, namely static tests (facilities in a stopped state) carried out at depots and yasa halls and dynamic tests (facilities in a mobile state) are carried out at cross-train operations. The depot is a place for light maintenance of the facility, while for large maintenance it is carried out in the yasa hall. The problem that occurs in this work environment, where depots and yasa halls are also used as maintenance facilities, so that the work environment that is not specifically for this testing can cause various problems such as cleanliness, noise, smooth work and so on. There are testers who cannot operate certain testing equipment, so they

need to increase competence. There is a dependence between employees and others in completing tasks, so that it will interfere with the running of work, this can be due to the low acceptance of employee competencies. Lack of creativity at work, which can be caused by the same routine in carrying out work, this can reduce the competence of employees. The pressure in conducting testing of these facilities often occurs especially during the first test and the means will be put into operation immediately, thus affecting the effectiveness of the work. An understanding of new things is needed because the rapid development of means technology can affect the effectiveness of work.

## II. RESEARCH PROBLEM

This study tries to answer the following questions:

- Is there any influence on employee work motivation directly affecting the competence of the facility examiner of the Directorate General of Railways in 2022?
- Does the influence of the work environment directly affect the competence of the facilities examiner of the Directorate General of Railways in 2022?
- Is there an influence on employee work motivation directly affecting the work effectiveness of the Directorate General of Railways in 2022?
- Does the influence of the work environment directly affect the effectiveness of the work of the Directorate General of Railways in 2022?
- Is there any influence on the competence of the facilities examiner directly affecting the effectiveness of the work of the Directorate General of Railways in 2022?
- Is there an indirect influence of employee work motivation on work effectiveness through the competence of the facility examiner of the Directorate General of Railways in 2022?
- Is there an indirect influence of the work environment on work effectiveness through the competence of the facility examiner of the Directorate General of Railways in 2022?

## III. LITERATURE REVIEW

### A. Motivation

According to Hasibuan (2012) Motivation questions how to direct the power and potential of subordinates, so that they are willing to work together productively to succeed in achieving and realizing predetermined goals. Motivation is the impulse or turmoil that arises from within the human being to meet his various needs according to the wishes of each one (Murtie, 2012). According to Edwin B Flippo in the book Malayu S.P Hasiubuan (2013), motivation is: "A skill, in directing employees and organizations to be willing to work successfully, so that the wishes of the employees and the goals of the organization are at the same time achieved". According to Bernard Berelson and Gary A.Sainer in Suwanto (2012), States that, "Motivation as a psychiatric state and human mental attitude that energizes, encourages activities/movements and leads or channels behavior towards achieving needs that give satisfaction or reduce imbalance". According to Sondang P. Siagian (2008) that the motivation indicators are as follows: (1) Driving power, (2) Will, (3) Willingness, (4) Forming expertise, (5)

Forming skills, (6) Responsibility, (7) Obligations, (8) Goals.

Herpen et al. (2002) In Koesmono (2005) the results of his research say that a person's motivation is intrinsic and extrinsic Whereas , Kinman and Russel (2001) in Koesmono (2005) Intrinsic and extrinsic motivation is something that equally affects one's duties.

The combination of intrinsic and extrinsic incentives constitutes an agreement established and is related to psychology Motivation is a process that explains the intensity, direction and perseverance of an individual to achieve his goals. Motivation is "an impulse or will that causes someone to do something" Nawawi (2006) in Potu (2013). A person's behavior is essentially determined by his desire to achieve several goals. Desire is another term is motivation. Thus motivation is the impetus for a person to carry out an activity to achieve the goals of Thoha, (2012) in Potu (2012). Muchlas (2004) in Potu (2013) stated that motivation is the willingness to strive /strive to a higher level towards the occurrence of organizational goals on the condition that it does not neglect its ability to obtain satisfaction in meeting personal needs.

Motivation is the force that drives an employee to cause and direct behavior (Kreitner and Kinicki, 2005) in Christian et al (2013). In its formation, Work Ability refers to several indicators according to Kreitner and Kinicki (2005) in Kristiani et al (2013) namely:

- The focus of the direction, with its sub-sub-indicators sets goals, pays attention to success, completes tasks on time.
- Business intensity, with its sub-sub-indicators willing to work overtime, discipline to time, maximum utilization of time and participation in the company.
- The quality of the business strategy, with its sub-sub-indicators learns from failures, conducts continuous evaluation and innovation and tries hard and persistently.

From the explanation above, the author explains that motivation is a factor whose presence can cause activities that are directed at a certain goal, so it needs to be encouraged and maintained in organizational life, including work life in organizations. The aspect of work motivation is absolutely received serious attention from leaders who are in daily contact with subordinates at work.

### B. Work Environment

According to Nitisemito (2002:109) in Bobby's journal quote the work environment is everything that exists in the worker's environment that can affect him in carrying out the charged duties. Indicators of the work environment are also factors that affect employee job satisfaction (Plenary, 2013). Wahyuningsih (2014) stated that employees really expect conducive and supportive work environment conditions in every process of carrying out their work, but in fact there are still many shortcomings and even limited availability of supporting facilities and infrastructure. Research conducted by Jain and Surinder (2014) states that the work environment affects job satisfaction. Jayasuriya, et al (2012) in her research on rural nurses in Papua New Guinea proved

that the work environment has a positive and significant effect on job satisfaction. Annakis, et al (2011) stated that the work environment has a significant effect on job satisfaction. Mulyanto (2009) also proved in his research that there is a significant influence of the environment on job satisfaction.

According to Sedarmayanti (2010) the indicators used to measure the work environment are as follows.

➤ *Lighting/light at work*

Light or lighting is of great benefit to employees in order to get safety and smooth work, therefore it is necessary to pay attention to the presence of bright but not dazzling lighting (light). Less clear (insufficient) light results in less clear vision, so that work will be slow, experience many errors, and ultimately lead to inefficiency in carrying out work, making organizational goals difficult to achieve.

➤ *Air circulation at work*

Oxygen is a gas needed by living things to maintain survival, namely for metabolic processes. The air around is said to be dirty when the oxygen level in the air has decreased and has been mixed with gases or odors that are harmful to the health of the body. The main source of fresh air is the presence of plants around the workplace. Plants are producers of oxygen needed by humans.

➤ *Noise at work*

One of the pollutions that is quite busy for experts to overcome it is noise, which is a sound that is not desired by the ears. It is undesirable because in the long run the sound can interfere with work conditions, damage hearing, and cause communication errors, even according to research, serious noise can cause death.

➤ *Bad smell at work*

The presence of odors around the workplace can be considered pollution, as it can interfere with the concentration of work, and odors that occur continuously can affect the sensitivity of smell. The use of the right "air condition" is one way that can be used to eliminate annoying odors around the workplace.

➤ *Safety at work*

In order to keep the place and working environment conditions in a safe state, it is necessary to pay attention to safety at work. Therefore the safety factor needs to be realized its existence. One of the efforts to maintain security at work.

The work environment is the entirety of the tools and materials faced, the surrounding environment where a person works, his work methods, and his work arrangements both individually and in groups (Sedarmayanti, 2010). In addition, according to Nitisemito (1982) the work environment is everything that exists around the employee and can affect in carrying out the duties carried out to him, for example by the presence of air conditioner (AC), adequate lighting and so on.

From two different opinions, namely from Nitisemito (1982) and Sedarmayanti (2010) about the work environment, it is hoped that the creation of a conducive work environment so that employees will feel at home at work. According to Nitisemito (1982) indicators that can measure the work environment are as follows:

- Working Atmosphere, if employees are faced with a work environment that tends to be positive, then employees will be easier to develop and contribute bright ideas.
- Relationships with colleagues, where by creating harmonious and familial relationships between colleagues will be a trigger so that employees are motivated to be more productive so that employee and company performance will improve.
- The availability of work facilities, so that employees can make a positive contribution to the company, training, training, skill upgrades, and equipment that support the smooth running of work in a complete and up-to-date manner.

Based on the above opinions, it can be concluded that the work environment as everything around employees and that affects them in working and carrying out their duties is expected to create a conducive work environment so that employees will feel at home at work. The work environment is also a factor that can improve employee performance or even decrease. When employees work in a good work environment, their ideas, productivity, and performance can increase.

*C. Competence*

Boyatzis In Hutapea Dan Nurianna Thoha (2008) Competence is a capacity that exists in a person that can make that person able to fulfill what is required by work in an organization so that the organization is able to achieve the expected results. Kurniadi A. (2013) stated that the factors of ability are twofold, namely: (1) Physical ability, namely the ability to move according to conditions of stamina, strength and biological characteristics, (2) Intellectual ability, namely ability in activities related to mental activity. Nur Hidayati (2014) Some aspects contained in the concept of competence, are as follows:

➤ *Knowledge*

That is awareness in the cognitive sphere. For example, an employee knows how to identify learning, and how to do good learning according to the needs of the company.

➤ *Understanding*

That is the cognitive, and effective depth possessed by the individual. For example, an employee in carrying out learning must have a good understanding of the characteristics and working conditions effectively and efficiently.

➤ *Abilities (skills)*

It is something that is possessed by the individual to carry out the duties or work charged to him. For example, the ability of employees to choose work methods that are considered more effective and efficient.

➤ *Value*

It is a standard of behavior that has been believed and psychologically has converged in a person. For example, the standards of behavior of employees in carrying out their duties (honesty, openness, democracy, and others).

➤ *Attitude*

That is a feeling (happy-not-happy, and like-dislike) or a reaction to a stimulus coming from outside. For example, the reaction to the economic crisis, feelings for the salary increase, and so on.

➤ *Interest*

It is a person's tendency to do an act. For example, doing a work activity.

Based on the explanation above, the author makes a synthesis of competencies affecting the performance of the facility examiner. The higher the competence possessed by the examiner and in accordance with the demands of the job role, the examiner's performance will increase. This will give the examiner a strong impetus to work on the tasks charged to him. The professionalism of the testers is the main capital in improving testing. With competent and professional examiners and expertise, the performance of the work will run optimally.

*D. Work Effectiveness*

According to Steers M Richard (2012: 209-211) explained, There are four factors that affect work effectiveness, namely:

➤ *Organizational Characteristics*

The characteristics of the organization consist of the structure and technology that can be used in it. The effectiveness of an organization is influenced by the level of complexity and formality of the structure and system of authority in decision making. The technology used is closely related to the structure so that it affects the effectiveness of an organization.

➤ *Environmental Characteristics*

The success of an organization in achieving goals, is influenced by the ability to interact with its environment. The environmental dimensions that affect the effectiveness of an organization include the degree of integration of environmental conditions, the accuracy of perceptions of environmental conditions, the level of rationality of the organization. These three factors affect the correctness of the organization's response to environmental changes.

➤ *Characteristics of Workers*

The human factor is the factor that has the most influence on the effectiveness of an organization. Humans are a very meaningful support, but they can also be obstacles that can derail effectiveness.

➤ *Characteristics of Management Wisdom and Practice*

Management wisdom and practice can influence the achievement of goals. In this case it includes the wisdom and practice of the leader in his responsibility to the workers and his organization.

Based on the explanation above, the author makes a synthesis that work effectiveness is a form of effort carried out by the testers of the means carried out jointly towards the achievement and fulfillment of testing targets in accordance with the standards applicable in the organization. Work effectiveness is a process of completing work precisely and efficiently, with indicators of: (1) achievement of targets, (2) realization of goals, (3) quality of work, (4) efficiency of work, (5) level of productivity.

**IV. RESEARCH METHOD**

The sampling technique used in this study used the author used the Total Sample (Census) technique. Where each employee of the population has an equal chance of being selected as a sample. The sample size of the author using theory or according to Suharsimi Arikunto, (2014: 95) suggests that:

As an ancet-ancet, if researchers have several hundred subjects in their population they can use approximately 25-30% of these, if the subject employees in the population only include between 100 and 150 people, and in the collection of data the researcher uses a questionnaire, it is recommended that the subjects in the population be taken entirely.

So the sampling technique used in this study the author used the Total Sample (Census) technique so that the sample was 70 people taken in full or 100% were sampled.

In this case, the population is the examiner of facilities at the Directorate General of Railways as many as 70 people.

**V. RESULT**

*A. Validity Test*

The critical limit value of validity is 0.197. If the correlation value or calculated r is less than or less than 0.197 then the questionnaire item is declared invalid. Conversely, if the calculated value of r is greater than 0.197 then the questionnaire item is declared valid.

The following are the results of the validity test of the research instrument (questionnaire) for each of the variables studied:

Pernyataan	Nilai Koefisien Koreksi (r hitung)				Status
	(X1)	(X2)	(Y)	(Z)	
No. 1	0.780	0.777	0.787	0.762	Valid
No. 2	0.797	0.669	0.815	0.712	Valid
No. 3	0.675	0.669	0.786	0.768	Valid
No. 4	0.760	0.777	0.786	0.712	Valid
No. 5	0.675	0.777	0.654	0.768	Valid
No. 6	0.797	0.794	0.664	0.768	Valid
No. 7	0.797	0.669	0.787	0.712	Valid
No. 8	0.675	0.669	0.654	0.768	Valid
No. 9	0.675	0.794	0.786	0.712	Valid
No. 10	0.797	0.777	0.815	0.788	Valid

(X1) = Motivasi Kerja (Y) =Kompetensi  
 (X2) = Lingkungan Kerja (Z) =Efektivitas Kerja Pegawai

Table 1: The validity test

Source: Primary data, processed by Statistical Package for the Social Sciences version 25.

Table 1 shows that each item of each question variables of Work Motivation (X1), Work Environment (X2), Competence (Y) and Employee Work Effectiveness (Z) is all declared valid.

**B. Reliability Test**

Variable	Nilai Alpha	Nilai Batas	Status
Motivasi Kerja (X1)	0.910	0.70	Reliable
Lingkungan Kerja (X2)	0.907	0.70	Reliable
Kompetensi (Y)	0.915	0.70	Reliable
Efektivitas Kerja Pegawai (Z)	0.912	0.70	Reliable

Table 2: Reliability Test Result

Source: Primary data, processed by Statistical Package for the Social Sciences version 25

Table 2 shows that the overall alpha value of the grains present in each variable is reliable, since the Cronbach Alpha coefficient is greater than 0.70.

From the results of the validity and reliability analysis mentioned above, overall the points of statement of each variable can be used and distributed to all respondents (70 Respondents), because each item shows valid and reliable results, then further analysis can be carried out.

**C. Partial Test**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.611	4.558		1.231	.223
	Motivasi Kerja	.470	.113	.441	4.157	.000
	Lingkungan Kerja	.396	.140	.300	2.829	.006

a. Dependent Variable: Kompetensi

Table 3: Partial Test Structure 1

Source: primary data, processed by Statistical Package for the Social Sciences version 25

- Work Motivation (X1) affects competence (Y). Showing the test results individually (partial) / t test obtained a Sig value of 0.000 less than 0.05 or [0.000 < 0.05] , then the path analysis coefficient is significant. Thus, Work Motivation has a positive and significant effect on Competence. The magnitude of the direct influence of Work Motivation on Competence is indicated by a Beta value of 0.441 or 44.10 percent.
- Work Environment (X2) affects Competence (Y). Showing the individual (partial) test / t test obtained a Sig value of 0.006 less than 0.05 or [0.006 < 0.05] , then the path analysis coefficient is significant. Thus, the Work Environment has a positive and significant effect on Competence. The magnitude of the influence of the Work Environment on Competencies is indicated by a Beta value of 0.300 or 30.00 percent.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.814	3.281		1.467	.147
	Motivasi Kerja	.406	.090	.426	4.496	.000
	Lingkungan Kerja	.275	.106	.233	2.602	.011
	Kompetensi	.264	.087	.295	3.030	.003

a. Dependent Variable: Efektivitas Kerja Pegawai

Table 4: Partial Test Structure 2

Source: primary data, processed by Statistical Package for the Social Sciences version 25

- Work Motivation (X1) affects employee work effectiveness (Z). Showing the individual (partial) test / t test obtained a Sig value of 0.000 less than 0.05 or [0.000 < 0.05] , then the path analysis coefficient is significant. Thus, Work Motivation has a positive and significant effect on Employee Work Effectiveness. The magnitude of the direct influence of Work Motivation on Employee Work Effectiveness is indicated by a Beta value of 0.426 or 42.60 percent.
- Work Environment (X2) affects Employee Work Effectiveness (Z) Showing individual (partial) tests / t tests obtained Sig 0.011 less than 0.05 or [0.011 < 0.05] , then the path analysis coefficient is significant. Thus, the Work Environment has a positive and significant effect on employee work effectiveness. The magnitude of the influence of the Work Environment on Employee Work Effectiveness is indicated by a Beta value of 0.233 or 23.30 percent.
- Competence (Y) affects employee work effectiveness (Z). Showing the test individually (partial) / t test obtained a value of Sig value of 0.003 less than 0.05 or [0.003 < 0.05] , then the coefficient of path analysis is significant. Thus, competence has a positive and significant effect on employee work effectiveness. The magnitude of the influence of Competence on Employee Work Effectiveness is shown by a Beta value of 0.295 or 29.50 percent.

**D. Sobel Test**

Sobel test is a test to find out whether a relationship through a mediation variable is significantly able to function as a mediator in the relationship. To make it easier to calculate the z value of the sobel test, you can take advantage of the online danielsoper application through the www.danielsoper.com with the menu Statistic Calculator→Mediation Models → Sobel Test Calculator for Significance of Mediation, with the following results:

- Mediation Test the Effect of Work Motivation on Employee Work Effectiveness through Competence.

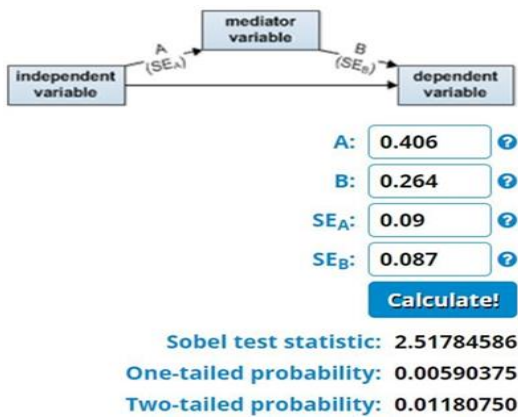


Fig. 1: Sobel test model 1

Based on Figure 1 shows a one-tailed probability result of  $0.00590375 < 0.05$ , so it can be concluded that the Competency variable can function as a mediator or be able to mediate the indirect influence of Work Motivation on Employee Work Effectiveness.

- Mediation Test of the Influence of the Work Environment on Employee Work Effectiveness through Competence.

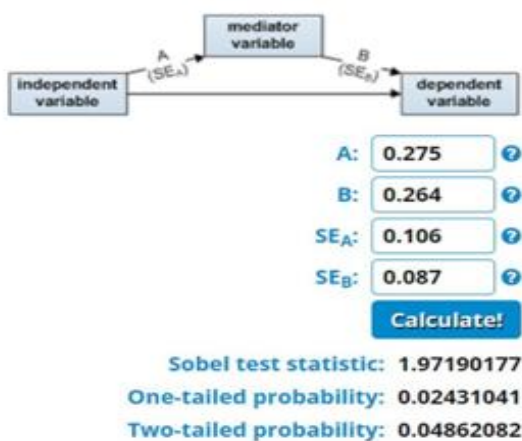


Fig. 2: Sobel test model 2

Based on Figure 2, it shows a one-tailed probability result of  $0.02431041 < 0.05$ , so that it can be concluded that the Competency variable can function as a mediator or be able to mediate the indirect influence of the Work Environment on Employee Work Effectiveness.

E. Goodness of Fittest Test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.639 <sup>a</sup>	.409	.391	1.759
a. Predictors: (Constant), Lingkungan Kerja, Motivasi Kerja				

Table 5: R Square Sub Structure 1

Source: primary data, processed by Statistical Package for the Social Sciences version 25

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794 <sup>a</sup>	.631	.614	1.252
a. Predictors: (Constant), Kompetensi, Lingkungan Kerja, Motivasi Kerja				

Table 6: R Square Sub Structure 2

Source: primary data, processed by Statistical Package for the Social Sciences version 25

Then the total diversity of data that can explain by the model is measured by:

$$R^2_m = 1 - (1 - R^2_1) \cdot (1 - R^2_2) \cdot (1 - R^2_p) \quad (1)$$

$$R^2_m = 1 - (1 - 0.409) \cdot (1 - 0.631) \cdot (1 - 0.614) \quad (2)$$

$$R^2_m = 0.742 \quad (3)$$

The  $R^2_m$  value of 0.742 means that the diversity of data that can be described by the model is 74.20 percent, while the remaining 25.80 percent is explained by other variables outside the model. And Then the research model has a high predictive ability over the behavior of dependent variables characterized by a high coefficient of determination above 50 percent.

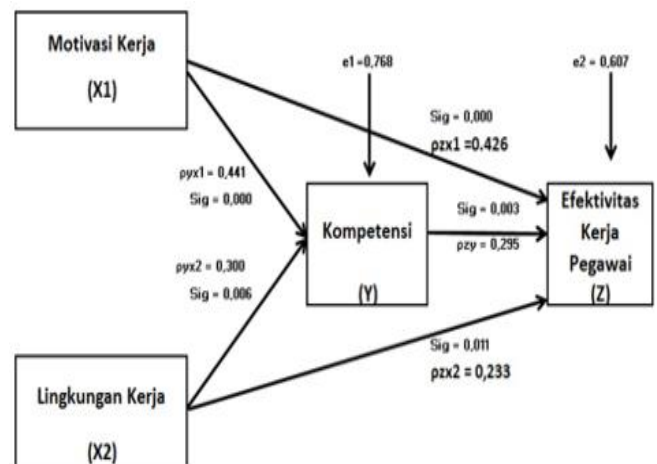


Fig. 3: R Square Sub Structure

VI. DISCUSSION

- **H1**, Work Motivation has a positive and significant effect on Competence. Based on the results of the analysis, the coefficient of the Work Motivation variable path to the Competency variable was obtained by 0.441 or 44.1 percent with a significance of 0.000. This means that the better the Work Motivation, the more Competence will increase. That way the competence possessed by the facilities examiner at the Directorate General of Railways is increasing.
- **H2**, Work Environment has a positive and significant effect on Competence. Based on the results of the analysis, the coefficient of the Work Environment variable path to the Competency variable was obtained by 0.300 or 30.00 percent with a significance of 0.006. This means that the better the Work Environment, the

more competence will increase. That way the competence possessed by the facilities examiner at the Directorate General of Railways is increasing.

- **H3**, Work Motivation has a positive and significant effect on Employee Work Effectiveness. Based on the results of the analysis, the coefficient of the Work Motivation variable path to the Employee Work Effectiveness variable was obtained at 0.426 or 42.6 percent with a significance of 0.000. This means that the better the Work Motivation, the better the Employee's Work Effectiveness will be. That way the Effectiveness of the Work of employees testing facilities at the Directorate General of Railways is increasing.
- **H4**, The Work Environment has a positive and significant effect on Employee Work Effectiveness. Based on the results of the analysis, the coefficient of the Work Environment variable path to the Employee Work Effectiveness variable was obtained by 0.233 or 23.3 percent with a significance of 0.011. This means that the better the Work Environment, the better the Employee's Work Effectiveness will be. That way the Effectiveness of Employee Work will increase.
- **H5**, Competence has a positive and significant effect on Employee Work Effectiveness. Based on the results of the analysis, the coefficient of the Competency variable path to the Employee Work Effectiveness variable was obtained by 0.295 or 29.5 percent with a significance of 0.003. This means that the better the Competence, the better the Employee Work Effectiveness will be. That way the Effectiveness of Employee Work can be achieved properly.
- **H6**, Competence is able to function as a mediator or mediate the influence of Work Motivation on Employee Work Effectiveness. This means that the appropriate Competence for Work Motivation that is applied is able to increase Employee Work Effectiveness, so that Competence as an intervening variable is proven to function to strengthen the influence of Work Motivation on Employee Work Effectiveness.
- **H7**, Competence is able to function as a mediator or mediate the influence of the Work Environment on Employee Work Effectiveness. This means that the appropriate competencies for the work environment applied are able to increase employee work effectiveness so that competencies as an intervening variable are proven to function to strengthen the influence of the Work Environment on Employee Work Effectiveness.

## VII. CONCLUSION

From the results of research and overall analysis, some conclusions can be drawn as follows:

- Work Motivation has a positive and significant effect on Competence.
- The Work Environment has a positive and significant effect on Competence.
- Work Motivation has a positive and significant effect on Employee Work Effectiveness.
- The Work Environment has a positive and significant effect on employee work effectiveness.

- Competence has a positive and significant effect on Employee Work Effectiveness.
- Competence is able to function as a mediator or mediate the indirect influence of Work Motivation on Employee Work Effectiveness.
- Competence is able to function as a mediator or mediate the indirect influence of the Work Environment on Employee Work Effectiveness.

## VIII. RECOMMENDATION

Based on the conclusions above, the authors provide suggestions and recommendations as follows:

- To improve and maintain the effectiveness of employee work and to avoid a decrease in the motivation of facilities examiners at the Directorate General of Railways caused by decreased work motivation and an unsupportive work environment which results in a decrease in the motivation of facility examiners at the Directorate General of Railways, it is necessary to create a safe and comfortable work environment, provide provisions or training for self-development, holding outings or vacations together, providing pay according to workload and expertise, providing opportunities for opinions, and providing a clear career path so as to increase work motivation and improve working environment conditions to improve competence. So that the work environment will get better grades than it is today. This can lead to an increase in Employee Work Effectiveness.
- Other researchers who will conduct research on Work Motivation, Work Environment, Competence and Work Effectiveness Employees are advised to examine other variables that also have a significant influence. So it is hoped that these studies can be useful in providing input and recommendations to the Directorate General of Railways and the academic world.

## IX. IMPLICATION

Based on the conclusions of the research results and recommendations that have been described above, the implications are that work motivation and the work environment in competence are getting better, the effectiveness of the work of the employees produced is more in line with expectations, because between variables have a very influential relationship, work motivation and competence have a very large value in relation. Operational activities can run optimally and in accordance with the objectives of the Directorate General of Railways which is guided by Standard Operating Procedures (SOP), the use of technology that is easier to make it easier for customers to access services. With work motivation and an improving work environment, whatever problems arise will immediately get a solution to avoid the ineffectiveness of employee work in carrying out daily work.

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