Journal of Research in Business, Economics, and Education Volume 3
E-ISSN 2686-6056 Issue 5
October Edition 2021

Implementation of 5R, Reward And Working Safety On Productivity Construction Project

Dewi Tamara[1*], Aditya Cahyo Nugroho[2], Denny I. Ardiansyah[2]

[1]*Executive in Strategic Management Program, Binus Business School, Binus University*
[2]*Applied Finance Program, Binus Business School, Binus University*

**e-mail: dtamara@binu.edu*

Abstract

The development of construction business is highly increased. It is caused by the improvement of productivity on the project division of power plant and industrial plant. The achievement of productivity effort is a performance measurement of a corporation. The study aims at investigating the impact or contribution of 5R implementation, Rewards, and Working Safety on productivity of commissioning working stage on construction project of PT Wijaya Karya (Persero) Tbk. The method of the study was quantitative using multiple regression statistic test to know the influence among variables. Sample of the study were workers of Operation Directorate II having duty on Engineering and Commissioning functions. The result of the study showed that the implementation of 5R, rewards and working safety either simultaneously or partially had positive and significant influence on the productivity of the commissioning working stage on the construction project of PT Wijaya Karya (Persero) Tbk.

Keywords: 5R, Rewards, Working Safety, Productivity, Commissioning.

1. INTRODUCTION

The Construction is a building corporation including a range of activities started from field preparation to the construction final delivery. In organizing work, there are several aspects should be attended, namely: (1) time relating to the project period of organizing, (2) cost relating to the project budged, and (3) quality relating to its specification, and (4) working safety and health for workers and the community around the project. Generally, organizing a project involves many experts having different specific knowledge and skills, who work together. It implies that productivity in a construction project is highly important. One effort performed by company to improve productivity especially working performance and effectiveness is by implementing suitable working system toward the company business process, which is expected to be accepted and becomes habit for the workers. Ultimately, it is expected to be working culture in the company (Moica, 2018). One system used by the company to improve productivity is by implementing 5R working culture. Herea, et.al (2017) argue that the implementation of 5R culture is a critical factor giving impact on improving time effectiveness and rowking place quality, minimizing the additional cost on searching tools and material, taking tools, and keeping the material. 5R provides additional value and creates effective and efficient production place.

It is supported by Mane, et.al. (2018) that 5R is a system of creating and maintaining good working environment. The impact is creating comfortable working place, decreasing conditional working duty, changing working quality and safety. 5S is five Japanese words: seiri, seiton, seiso, seiketsu and shitsuke. This working place organization assists in making and maintaining efficiency and effectiveness of a working area. It also helps improving productivity. To improve working productivity, the company conducts 5R program to have the working area clean, more organized, and tidy, which can result in production effective and efficient process and output (Michalska & Szewieczek, 2017). The evaluation of implementing 5R program is conducted in construction project working area in scope of Operational Directorate II. In case of the 5R implementation, which is not conducted, it has potential to disturbed target achievement. It has been undergone by several projects having less attention to this program resulting additional cost and working progess delayed. There are some problems undergone by construction process when it is less in appreciating workers. The improvement of performance productivity is an organizational effort to develop business line owned. Motivation from workers must be done to increase productivity. This effort can be achieved by giving rewards.

Giving rewards is done by the company to appreciate workers' performance and motivate them either individually or group. It is done by many organization as means to make the employees interest in competitive working area and to improve workers' performance. The reward system can be given in form of financial and non financial reward (Nani & Apraku, 2016). Other factor which is critical in construction productivity especially in the scope of commissioning is working safety. Asadali and Desai (2019) argue that safety means free from danger or risk and safety is a safe condition. It can be realized in management that safety is an organizational function ensuring that all risk of safety has been identified, evaluated and mitigated satisfyingly. Issue of working safety has become hot topic for all sides. Construction progress must be stopped when the safety program is not implemented. Responsibility of safety personnel is arranging safety planning, determining regulation in case of construction or building location, and adapting everything related to the planning, ensuring effective distribution and usage of safety tools (Asadalil dan Desai,2019)

Company achievement can be seen from the productivity achieved. Since it makes the company more developed. Productivity is a measurement stating how well the resource managed and used to achieve optimum goal. Improving productivity needs process, it require loyalty and ability to determine improvement target and knowing factors influencing and inhibiting the improvement (Hardiantara dkk, 2019). Productivity shows an ability to perform activity resulting a product or qualified output in shorter periode of time using measurable working method (Moica, 2018). Construction especially in commissioning improves through time. The good productivity level must be accompanied by understanding that Commissioning is means to maintain quality and is a process to grant the owner project requirement fulfilled by design, final construction and operational of a building (Gillis & Cudney, 2015). Commissioning is a critical part in construction. Michalska and Szewieczek (2017) state that the implementation of 5R maximally may improve productivity, which is achieving company target. Reward is an important factor to achieve the achievement in commissioning process (Ezekiel, 2018). Then, the neglected working safety causes accident resulting in using bigger resource than the planned (Choudhry, 2017). To improve working productivity, PT Wijaya Karya (Persero) Tbk (PT WIKA) implements 5R (Ringkas, Rapi, Resik, Rawat, Rajin), Sistem Keselamatan & Kesehatan Kerja (K3L) and program of appreciation in the construction environment. On certain working stage, it is conducted evaluation of 5R & K3L program implementation on the construction project of Operational Directorate II, including on Comissioning working stage.

Timeliness of finishing work is an important criteria in project management of construction project. Involvement and commitment of the company management is reflected by powerful leadership with consistency in implementing system and procedure as well as integrating the whole resource in an organization through strong vision (Lalmi et al., 2021). Hardiantara (2019) argues that

productivity often undergoes much inhibition in construction process, including the construction project of Operational Directorate II of II PT Wijaya Karya (Persero) Tbk., which causes less productivity, such as the incorrect use of the store house so that there is incorrect place to keep main material, the final product and garbage. Productivity cannot be implemented well due to the time consuming in searching tools and the bad management material. Bad material placement and less of material identification has potential to error in taking material and loss of material and money due to the inproper keeping. Chinyio (2017) also states that the productivity can be inhibited by employees' appreciation. The less appreciated employees in construction project must be reviewed. Giving good financial and non financial reward must also be evaluated if the productivity is not better. Then the procedure of working safety has not been implemented well in the construction project.

2. LITERATURE REVIEW

Productivity

Productivity comes from word productive meaning something containing potential to explore so that the productivity can be said as process of structured activity to explore potential inside the commodity or object (Hasibuan, 2012). Hamza, et.al. (2019) defines productiovity in construction as achieving maximal output. Then, it is known as ratio measurement between output and input, which is used to result in output. Output consists of product or service comprising of material, worker, capital and energy. Working productivity can be achieved when company complete or complete beyond the initial target when the organization is founded by using suitabel compensation (Nani & Apraku, 2016). Working productivity according to (Sunyoto, 2012) is comparing output and input, which is the output must have additional value and better implementation technique. Better productivity results in bigger compensation. Otherwise, bad productivity results in small compensation. Hardiantara, et.al. (2019) states that construction industry particularly power plant regards productivity as company achievement. It reflects the development of the company. Productivity is a measurement stating how well the resources managed and used to achieve optimum result. Analysis of productivity makes the company is able to assess the efficiency of the resource conversion in order to improve efficiency in using resource. High electrical needs in Indonesia is not comparable to tthe electrical production resulted by the existing electrical plant. It is caused by less production of electric outside Java and less productivity of existing electrical generation. Therefore, it needs analysis of productivity for the unit to improve the usage.

Measurement Dimension of Working productivity in Power Plant Construction

According to Umar (2012), there are several dimension of working productivity in construction as follow:

1. Operational working attitude dimension, includes: attitude to serve, attitude to perform work, and attitude to perform working initiative.
2. Dimension of operational skill, includes: skill to complete the task, skill to implement program, and skill to evaluate program achievement.
3. Dimension of operational working relationship, includes: leader-work relationship, among division work relationship, and co-worker work relationship.
4. Dimension of productivity management, includes: working coordination, among division communication, and working responsibility.
5. Dimension of efficiency, includes: number of worker, force the rowkers, and use of worker's time.

The Notion of 5R (Ringkas, Rapi, Resik Rawat and Rajin)

The definition of **5S** is a range of five Japanese words: Seiri, Seiton, Seiso, Seiketsu and Shitsuke. 5S is an organizational technique to help creating and keeping the efficiency and effectiveness of a working area to improve productivity (Mane, 2019). According to Pinto dan Siregar (2019) concept of 5R/5S also relates to culture of how employees can work in the working area correctly. When the working area is arranged tidyly, clean, and orderly the personal perfoemance can be achieved. It means that the easiness in working can achieve four main target of electrical instalation, including:

- working efficiency
- working productivity
- working quality
- working safety which is easier to achieve

Satisfying these main target is required in developing industry so that the benefit can be accepted not only by the company but also by the workers. Before implementing the program of 5S, the management should take picture of the working area. It can be used as comparation between the previous and after implementation of 5R/5S performed.

In Indonesia, term of 5R is adapted from 5S, which has meaning as follow (Herea, 2017) :

A. Simple (Seiri - Sorter)

Sort implies that isolating unnecessary and necessary things from the working area to product recently.

B. Tidy (Seiton)

Set in order means that it is managed orderly or managing material in order to be easy to use and it is given label to make it easy to find.

C. Clean (Seiso – Shine)

Shine menas clean to evaluate. Cleaning and daily evaluation aims to understand working condition.

D. Care (Seiketsu - Standardization)

Standardization occurs when the three of first 5s are actualized and maintained legally. It implies in making standard strategy for consistency.

E. Rajin or dilligent (Shitsuke - Supporting)

Dilligent parameter is not a single separated activity. Dilligent is used to measure progress and to plan sustainable improvement of an activity.

Implementation of 5R in environment of PT Wijaya Karya (Perseo) Tbk has been conducted in every working unit especially in electrical instalation project. The implementation is measured in 5R duty is a measurement of performance related to the implementation of working area (house keeping). The evaluation of 5R is done by personnel financial function for Site Office area and production function for field area reported monthly using QIS (*QHSE Information Systems*) with the due date at 03 every month (Procedure of SMK3L of Nalar Usaha Konstruksi, 2019). Target, which must be achieved for HSE Level is 860. To achieve the target can be realized by the following way:

1. Realizing comfortable and cheerful working area
2. Creating discipline for the employees
3. Improving working efficiency
4. Renovating working area by involving every single worker

Rewards

Most business organization uses such kind of reward to improve worker's performance. Appreciation is a positive result achieved from worker's performance and it is suitable with the

organization goal when the worker helps organization to achieve it (Salah, 2016). Chinyio (2017) states that reward is an appreciation given to the worker based on their duty done, fulfilling or beyond the initial expectation of an organization. The reward system can be in form of financial or non financial benefit.

Financial Reward System

Principally, human works as his or her life's goal. A worker works and shows his or her loyalty toward the company due to the company gives him or her its appreciation for their working achievement by giving rewards. The way the management improve working achievement is through compensation or financial rewards (Sari, 2019). Chinyio (2017) argues that financial rewards motivate employees to work extra in their performance. They tends to look at the financial reward as the most important factor to motivate their work. The financial reward system which can be used are: main wage, promotion, Bonus, share, complement salary and working day.

Working Safety

Construction company management has responsibility to develop comprehensive written safety program orienting on the performance. The information involves the basic self-protection tools, using electric tool and equipment, safe working practice, company policy about safety, safety responsibility, and emergency procedure. Choudhry (2017) also states that construction industry is regarded as harmful due to the characteristic of decentralization and mobility. Working accident in the location likely happens when the company policy is not adequate, unsafe practice, and unsafe attitude of the construction personnel, bad management commitment, and inadequate knowledge and workers' training. Asadalil and Desai (2019) states that management policy type or commitment toward safety in working area is very important to prevent accident. The finishing target, therefore, can be achieved as determined before.

Policy of Working Safety Management in Working Place

Asadalil and Desai (2019) argue that management policy type or commitment toward safety in working place is highly important to prevent accident. Health Safety Environment (HSE) and Working Safety and Health Administration describe the preventive steps as follow:

1. Wearing suitable clothes based on the work and wheather condition in the location. Using gloves.
2. Putting on booth of work traction in the location. Wearing hardhats or helmet wherever in the location. Providing glasses to welding work.
3. Inspection and constant evaluation toward tools, factory, equipment, and other sites material before using them.
4. Holding effective safety training to all workers and personnel either inside or outside the location. Providing effective first aid kit in the location.
5. Providing string, sign or reflector aroung the harmful area in the location.

Working Phase of Commissioning

In generating construction process, commissioning is a process focusing on the quality to improve the project finishing. The process focuses after verifying and documenting that the facility and all other system and arrangement are planned, organized, operated and maintened to fulfill the requirement of the project owner (Gillis & Cudney, 2015). While, Lawry and Pons (2013) states that Commissioning is a critical activity in many project modifying the structural planning and having significant implication on the project success. It is often taken in project planning, rather it is not

known. Otherwise, the problem is less systematic approach to commissioning. Several steps taken to minimize related risk toward the instalation new tools such as danger study and operating, project management, developing redundance planning and new tool commissioning.

Scope of Commissioning on Power Plant and Industrial Plant.

Based on the guidance book of Commisioning 2019 edition, it is stated that there are several scope of commissioning in this industry, namely:

1. Ensuring scope of work commissioning defined well. To determine scope of work is derived from proposal engineering and tender document. They become source to arrange working scope and the achieved timeline.
2. Ensuring acceptance standard based on the government regulation. It results in commissioning method statement.
3. After reviewing the government regulation, the next step is determining list of item commisioing. It is cited in schedule of planning commissioning. The detail of commissioning schedule consists of Man Power Planning, Material Consumable Planning, Equipment Planning, and Temporary Material Planning.
4. Formulating the existence data to be commissioning excecution plan. Then, performance test will be performed to handover construction work to commissioning.
5. Organizing activity based on the procedure and schedule agreed. Then, it is arranged memo of Pre Comm anndIndividual test conducted.

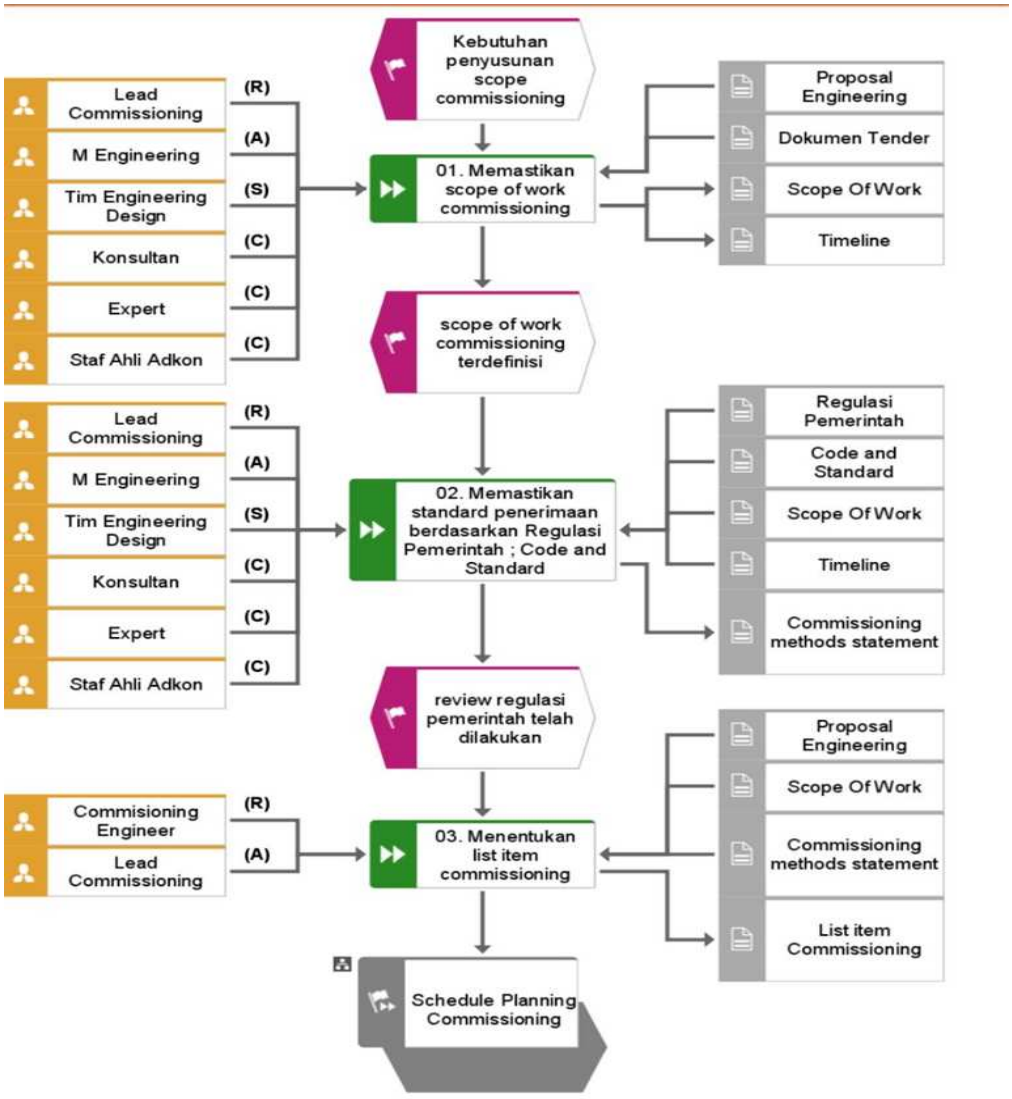

Figure 1. Commissioning Scope of Work

Hypothesis

Based on the elaboration above, the hypothesis of the study are:

- The implementation of 5R has positive and significant influence on productivity
- The implementation of Rewards has positive and significant influence on productivity
- The implementation of safety procedure maximally has positive and significant influence on productivity

3. METHODS

Type of the present study was survey in form of questions proposed in written statements and spread to the respondents to answer. Then, it is sent back to the writer. The questionnaire is used to take data from respondents to test the correlation among variables of 5R program, Rewards, and working safety and the working productivity. Based on the present study, it will develop a theory to explain, estimate, predict, and control a symptom. The study is quantitative using data counting and the qualitative analysis is used to describe data collected to make it clearer. The study has two variables, variable X_1 (Program 5R), X_2 (Rewards) and X_3 (Working safety) and variable Y (Working productivity).

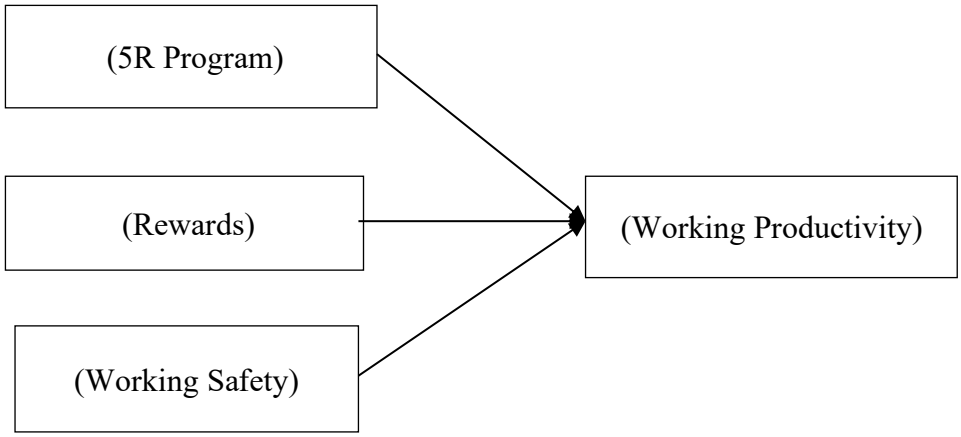

Figure 2. Research Model

Population

Population is area of generalization consisting of object/subject having certain quality and characteristic determined by the researcher to learn and then to draw conclusion (Acha, 2014). Population of the present study was the workers of Operational Directorate II consist of 711 persons.

Sample

Sample of the study was workers having function as engineering commissioning on construction project of electric generator of operational directorate II consist of 87 persons. The sampling used was purposive sampling.

Method of Collecting Data

To get valid and reliable data of the samples, it uses research instrumen, which is questionaire. The questionaire was given by the following steps: the statement of the questionaire was scored based on the measurement developed by Likert (Riduwan, 2011). The scale of Likert is as follow:

Table 1. Likert Scale

Answer	Score
Quite Agree	5
Agree	4
Doubtful	3
Not agree	2
Sangquite not agree	1

Source: Riduwan , 2011

The Operational Definition of Variable

Independent Variable

Independent variable is variable influencing or having effect of the dependent variable (Ghozali,2013). The independent variables of the present study are 5R, Rewards and working safety.

Dependent Variable

Dependent variable is variable influenced of effect, due to the independent variables (Ghozali, 2013). The dependent variable of the present study was working productivity. The indicators of the variables are presented on the following table:

Table 2. Variable and Indicator of Study

Variable	Concept	Indicator	Scale
Implementation of 5R	Mane (2019) states that 5R is technique the working organization helps to make and keep efficiency and effectiveness of a working area to improve productivity.	a. Ringkas (Simple) b. Rapi (tidy) c. Resik (clean) d. Rawat (care) e. Rajin (dilligent)	Interval Scale
Rewards	Chinyio (2017) states that compensation is appreciation given to the employees based on their duty performed or beyond the initial expectation of an organization.	a. Compensation b. Promotion c. Working satisfaction d. Communication with employer e. Comfort	Interval Scale
Working Safety	Asadalil and Desai (2019) state that type of management policy or commitment toward working safety in working area is hightly important to prevent accident. Choudhry (2017) argues that construction company management especially on the stage of commissioning has responsibility to develop comprehensive safety program and written focused on the performance.	a. Program of working safety b. Training of K3 c. APD d. Evaluation of working safety	Interval Scale
Productivity	Hamza, et.al. (2019) states that productivity in construction is	a.Working behavior b. Skill level c. Working relation	Interval Scale

Variable	Concept	Indicator	Scale
	defined as maximizing output. Then, it is known as ratio measurement between output and input used to produce output.	d. Management e. efficiency	

Technique of Analyzing Data

Validity and Reliability Test

Validity is a measurement used to know how far the accuracy of an instrument. It is done to know if the questionaire is valid or not which determines the item is used or not. Reliability test is done after a statement or question in the questionaire has been stated as valid. The reliability test is done to show how far a measurement can be done several time in an instrument.

Classical Assumption Test

The classical assumption test is the most important stage of a regression analysis. If there is not classical assumption symptom, it is expected that the regression is reliable. The ignore of classical assumption test means that the regression model resulted is useless or not valid. It consists of (Ghozali, 2013):

a. Multicolinearity test

Multicolinearity aims at testing if the regression model found such a correlation among independent variables. Serious multicolinearity results in the changing sign of the estimated parameter.

To test the multicolinearity, the writer uses method of VIF (Varian Infation Factor) and score of Tolerance. The both score of VIF and tolerance have opposite value, if the tolerance is great then the VIF is small. Score of VIF should not be greater than (five), if it is more than five, then there is multicolinearity. Otherwise, if the score of VIF is smaller, then there is not multicolinearity. It occurs similarly on the score of tolerance.

b. Heteroscedasticity test

Heteroscedasticity test aims at testing if regression model has different variance from residual between observation. It uses several methods, such as Glejser.

c. Normality test

The normality test aims at testing if the regression model has residual variable having normal distribution. As known that t test and F test assumpt that residual follows normal distribution. If this assumption is ignored, then the statistic test is not valid for small number of sample.

d. Linearity Test

Linearity test is used to test the model specification used is proper or better in other form of specification, which is linear, square or cubical. To know the proper specification, it can compare the score of deviation from linearity sig.> 0.05, thus there is significant linear correlation when the score of deviation from linearity sig.< 0.05 there is significant linear correlation.

Statistic Test

The statistic test is used to know the level of precision or accuracy of a function or equation to estimate the data analyzed. The score of the accuracy is measured from its goodness of fit. It can be inferred from score of t count, F count and score of determination (Ghozali, 2013).

a. Coeficient of Determination (R)

Coeficient of determination (R) shows the level of correlation between independent and dependent variables or how far the contribution of the independent and dependent variable (Ghozali, 2013).

Characteristics of R value are:

1) The value of determination coeficient is among (zero) and (one)
2) Small means that the ability of the independent variables in explaining the dependent variable is quite limited.
3) Score shows that there is no correlation between independent and dependent variables.
4) Score near one means that the independent variables give the whole information required to preduc the dependent variable variation.

Simultaneous Significance Test (F Statistic Test)

F statistic test shows whether the entire independent variables simultaneously influence the dependent variable (Ghozali, 2013). Hypotesis null (H_0) tested is the entire parameter in the model equals zero, or:

$$H_0 : b_1 = b_2 = \ldots\ldots = bK = 0$$

It means that whether the entire independent variables are not the significant explanation of the dependent variable.

$$H_A : b1 \neq b2 \neq \ldots\ldots \neq bk \neq 0$$

It means that entire independent variables simultaneously are the significant explanation on the dependent variable.

To test the hypothesis it uses F statistic test using criteria of decision making as follow:

a. Quik look : if F score is more, then H can be rejected on the degree of belief. On the other word, we accepts alternative hypotheis, stating that entire independent variables simulatenously and significantly influence the dependent variable.
b. Counting F count using formula of :

$$f = \frac{R^2 / (K-1)}{(1 - R^2)/(n-k)}$$

Where :

R = Coeficient of Determination

K = Number of independent variables

n = Number of sample

c. Comparing F count and F table. If F count is more than F table (f count > f table), then H is rejected and Ha is accepted.

T_{test} (Individual Test)

t-test is used to know how significant the influence of the independent variables on the dependent variable individually (Ghozali,2013). Determining hypothesis:

a. $H_O : \beta = 0$, = independent variable (Xi) has no influence on the dependent variable (Y).
   $H_O : \beta \neq O$, = independent variable (Xi) has influence on the dependent variable (Y).
b. Determining t table
   Determining t table uses α level of 5% and freedom degree of (dk) = n – 1– k

Where :
n : number of data
k : number of variable studied

c. Taking decision
If t count < t table, then HO is accepted. It means that there is no significant influence between independent and dependent variables
If t count ≥ t table, then HO is rejected. It means that there is significant influence between independent and dependent variables

4. RESULT AND DISCUSSION

Descriptive Statistic Test

Respondents taking part in this study were grouped based on the gender, male and female. To know the gender proportion of the respondents, it is presented on the following table:

Table 3. Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	82	94.3	94.3	94.3
	Female	5	5.7	5.7	100.0
	Total	87	100.0	100.0	

Source: primary Data primer analyzed, 2021

Based on the table, it is known that the male respondents were more than the female. The male and female respondents were 82 persons or 94.3% and the 5 persons or 5.7%, respectively.

Table 4. Working period

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 2 years	1	1.1	1.1	1.1
	2 to 10 years	76	87.4	87.4	88.5
	> 10 years	10	11.5	11.5	100.0
	Total	87	100.0	100.0	

Source: Primary Data Analyzed, 2021

Based on the table, it is known that the respondents having working period of < 2 years is 1 person or 1.1%. Respondents having working period in range from 2 to 10 years are 76 persons or 87.4%. Meanwhile, the respondents having working period of > 10 years are 10 persons or 11.5%. thus, it can be concluded that in this present study that the most respondents are those having working period in range from 2 to 10 years.

Table 5. Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Construction Manager	2	2.3	2.3	2.3
	Staff	77	88.5	88.5	90.8
	Pelut	4	4.6	4.6	95.4
	Kasie	2	2.3	2.3	97.7
	Lead Commisioning	2	2.3	2.3	100.0
	Total	87	100.0	100.0	

Source: Primary Data Analyzed, 2021

Based on the data above, it can be seen that the respondents having position of construction manager are 2 persons (2.3%), staff 77 (88.5%), Pelut 4 persons (4.6%), Kasie 2 persons (2.3%) and Lead Commisioning 2 persons (2.3%). Based on the result it can be inferred that the most respondents are those having position as staff.

Reliability Test

The reliability test is performed to know the consistency of the measurement tool to be used in other similar study. A variable is reliable when the score of cronbach alpha is more than 0.6. The result of the reliability test shows that :

Table 6. Reliability Test

Variable	Corected Item Total Corelation	Meaning
5R	.737	Realible
Rewards	.641	Realible
Working Safety	.658	Realible
Productivity	.686	Realible

Source: Primary Data Analyzed, 2021

The table above shows that each variable has score of *Cronbach Alpha* >0.6. it means that the variables are reliable to use as measurement in this present study and the following study.

Validity Test

This analysis is used to measure how precise a test performs its function or to reflect the variable measured. The measurement items are valid when the score of two tailed pearson correlation are 1% and the one tailed is in level of 5%. The following is the result of the validity test:

Table 7. Validity Test

Variable	Item	Corected Total Correlation	Category
5R	Item 1	0.471**	Valid
	Item 2	0.590**	Valid
	Item 3	0.635**	Valid
	Item 4	0.482**	Valid
	Item 5	0.524**	Valid
	Item 6	0.494**	Valid
	Item 7	0.512**	Valid
	Item 8	0.696**	Valid
	Item 9	0.688**	Valid
Rewards	Item 1	0.757**	Valid
	Item 2	0.667**	Valid
	Item 3	0.678**	Valid
	Item 4	0.670**	Valid
Working Safety	Item 1	0.543**	Valid
	Item 2	0.684**	Valid
	Item 3	0.686**	Valid
	Item 4	0.702**	Valid

Variable	Item	Corected Total Correlation	Category
	Item 5	0.629**	Valid
Productivity	Item 1	0.698*	Valid
	Item 2	0.650**	Valid
	Item 3	0.622**	Valid
	Item 4	0.683**	Valid
	Item 5	0.683**	Valid

Source: Primary Data Analyzed, 2021

The table above indicates that the entire questions used in the one tailed variable are on level of 5% and the two tailed is on level 1%. Thus, it can be concluded that the item of questions used are valid.

Classical Assumption Test

Multicolinearity Test

The present study used VIF (*Varian Infation Factor*) and tolerance score. The both VIF and tolerance had different score. The tolerance was greater, then the VIF was small and vice versa. The score of VIF was not greater than 5 (five). If the score was more than 5, it can be said that there was multicolinearity. Otherwise, if the score of VIF was less than 5, then there was no multicolinearity. It also occured on the score of tolerance.

Table 8. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	1.667	1.595		1.045	0.299		
	Total_Implementasi5R	0.137	0.066	0.225	2.055	0.043	0.414	2.414
	Total_ImplementasiReward	0.362	0.111	0.312	3.269	0.002	0.545	1.834
	Total_ImplementasiKeselamatan	0.373	0.100	0.354	3.718	0.000	0.549	1.821

a. Dependent Variable: Total_ProduktifitasComm

Source: Primary Data Analyzed, 2021

The result of the multicolinearity test, it is known that the score of VIF for 5R was 2.414, Rewards 1.834 and working safety was 1.821. it can be concluded that the present study had no multicolinearity.

Heteroscedasticity Test

Heteroscedasticity test is used to determine efficiency of a sample and to know the significance score of t-test and T-Table. The present study used Glejser technique to determine the homoscedasicity. The following table is the result of the heteroscedasticity:

Table 9. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.351	1.025		3.269	0.002
	Total_Implementasi5R	-0.009	0.043	-0.034	-0.205	0.838
	Total_ImplementasiReward	-0.032	0.071	-0.066	-0.448	0.655
	Total_ImplementasiKeselamatan	-0.040	0.064	-0.092	-0.627	0.532

a. Dependent Variable: abss

Source: Primary Data Analyzed, 2021

The data above state that the significance level of 5R is 0.838, reward is 0.655, and working safety is 0.532. Based on the result, it can be concluded that there is no heteroscedasticity.

Normality Test

Normality test is conducted to test whether the independent variables and the dependent variable in the regression model have normal distribution or not.

The normality test used Kolmogorov Smirnov test that if the significance level is less than 0.05, it means that the data have significant difference to the basic normal data, it means that the data is not normal. If the significance level is more than 0.05, then there is no significant difference among data tested by basic normal data.

Table 10. One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		87
Normal Parameters[a,b]	Mean	0.0000000
	Std. Deviation	2.42545983
Most Extreme Differences	Absolute	0.093
	Positive	0.056
	Negative	-0.093
Test Statistic		0.093
Asymp. Sig. (2-tailed)		0.062[c]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.

Source: Primary Data Analyzed, 2021

The data above, it can be seen that the significance score is 0.062, which is more than 0.5. Thus, the score is above 0.05 then the data distribution fulfills normality assumption.

Linearity Test

This test shows the significance level of deviation from linearity of each dependent variable toward the independent variables. This technique is usually done to see if there is the autocorrelation of a regression model.

The linearity test of variable X_1 toward variable Y

Table 11. ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Total_ProduktifitasComm * Total_Implementasi5R	Between Groups	(Combined)	700.383	22	31.836	3.882	0.000
		Linearity	548.136	1	548.136	66.836	0.000
		Deviation from Linearity	152.247	21	7.250	0.884	0.610
	Within Groups		524.881	64	8.201		
	Total		1,225.264	86			

Source: Primary Data Analyzed, 2021

Based on the table, it can be seen that the score of deviation from linearity is 0.610. The linearity test of variable X_2 toward variable Y:

Table 12. ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Total_ProduktifitassComm * Total_ImplementasiReward	Between Groups	(Combined)	633.459	13	48.728	6.011	0.000
		Linearity	509.413	1	509.413	62.837	0.000
		Deviation from Linearity	124.046	12	10.337	1.275	0.252
	Within Groups		591.806	73	8.107		
	Total		1,225.264	86			

Source: Primary Data Analyzed, 2021

Of the table, it can be seen that the score of deviation from linearity is 0.252. The linearity test of variable X_3 toward variable Y.

Table 13. ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Total_ProduktifitasComm * Total_ImplementasiKeselamatan	Between Groups	(Combined)	709.774	15	47.318	6.517	0.000
		Linearity	540.825	1	540.825	74.489	0.000
		Deviation from Linearity	168.949	14	12.068	1.662	0.084
	Within Groups		515.490	71	7.260		
	Total		1,225.264	86			

Source: Primary Data Analyzed, 2021

Of the table, it can be seen that the deviation from linearity is 0.084 Based on the linearity test of every single independent variable toward the dependent variable, it can be seen that there is linear pattern of the correlation of X and Y and there is no linear pattern on deviation from linearity. Thus, it can be concluded that it fulfills the linearity requirement.

Multiple Linear Regression Test

The method of data analysis on the present study uses multiple regression. The result of the multiple regression is presented on the following table:

Table 14. Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	1.667	1.595		1.045	0.299		
Total_Implementasi5R	0.137	0.066	0.225	2.055	0.043	0.414	2.414
Total_ImplementasiReward	0.362	0.111	0.312	3.269	0.002	0.545	1.834
Total_ImplementasiKeselamatan	0.373	0.100	0.354	3.718	0.000	0.549	1.821

Source: Primary Data Analyzed, 2021

Based on the table above, it can be arranged the equation of the multiple linear regression as follow:

$$\mathbf{Y = 1{,}667 + 0{,}137\ R5 + 0{,}362\ Reward + 0{,}373\ Kesl + \varepsilon}$$

Determination Coeficient Test

The test aims at knowing the contribution of the independent variables toward the dependent variable. The score of R^2 can be seen on the following table:

Table 15. Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.766[a]	0.587	0.572	2.469

Source: Primary Data Analyzed, 2021

Based on the result of the data analysis, it can be inferred that the determination coeficient of adjusted R^2 is 0.572. it means that the influence of the implementation of 5R, rewards, and working safety have contribution of 57.2% toward the working productivity on the stage of commissioning on PT Wijaya Karya (Persero) Tbk, while the residue is 52.8 % is influenced by other factor outside the study.

Simultaneous Significance test (F Statistic Test)

The Ftest measures how far the independent variables simulatenously influence the dependent variable. The result of the F test is presented on the following table:

Table 16. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	719.339	3	239.780	39.337	0.000[b]
	Residual	505.926	83	6.095		
	Total	1,225.264	86			

Source: Primary Data Analyzed, 2021

Of the table, it can be seen that the score of the F count is 39.337 with significance level of 0.000. Thus, the significance level is smaller than 5%. It means that the regression model can be used to know the level of commissioning productivity. The independent variables consisting of 5R, Rewards and Working Safety have simulatenous and signisicant influence on the productivity on the stage of commissioning.

Partial Significance Test (T Statistic Test)

1. **The Influence of 5R Implementation of Commisioning Stage of Construction Project on PT Wijaya Karya (Persero) Tbk.**

   The counting of t test shows t count of 2.055 with significance score of 0.043. Based on the result, it can be seen that the score of t count (2.055) is greater than score of t table (1.988) and the significance score is less than 5% which is 4.3 %. Thus, it can be stated that the implementation of 5R has positive and significant influence on the Productivity of Commisioning stage on construction project of PT Wijaya Karya (Persero) Tbk.

   It indicates that the improvement of implementing 5R (Ringkas, Rapi, Resik, Rawat dan Rajin) on working area of commissioning personnel has influence on improving the productivity on the stage of commissioning. The result of the study support the previous result that by creating working environment which is tidy, clean, orderly imply the working easiness. It influences directly the workers to achieve the target on the working stage.

2. **The Influence of Rewards on Productivity on the Commissioning Stage of Construction Project PT Wijaya Karya (Persero) Tbk.**

   Based on the result of the t-test, the t-count is 3.269 with significance score of 0.02. Therefore, it can be seen that t-count (3.269) is more than t-table (1.988) and the significance score is less than 5%, which is 2 %. It means that rewards has positive and significant influence on productivity on the stage of Commissioning on construction project of PT Wijaya Karya (Persero) Tbk**.**

   The result of the study implies that giving good amd maximal rewards has significant influence to improve productivity on the stage of commissioning. It is relevant to the concept that reward is one indicator used to improve performance. Besides, worker's loyalty is higher to achieve productivity determined when such an organization has given positive appreciation for the employees.

3. **The Influence of Working Safety on Productivity on the Stage of Commisioning of Construction Project Konstruksi PT Wijaya Karya (Persero) Tbk**

   Of the t-test analysis, the t-count is 3.718 with significance value of 0,000. It means that t-count is (2.230) more than t table (1.988) and the significance value is less than 5% which is 0 %. Thus, it means that the implementation of working safety has positive and significant on productivity on the stage of Commissioning of teh construction project PT Wijaya Karya (Persero) Tbk.

Based on the significance test, it can be concluded that the improvement of working safety influences positively on the improvement of productivity on the stage of commissioning of the construction project PT Wijaya Karya (Persero) Tbk. The improvement of working safety results in decreasing of working accident or even it will never happen. It causes the employees feel safe to work and achieve the working target of the stage.

5. CONCLUSION

The present study aims at investigating the influence of 5R implementation, rewards and working safety on productivity in commissioning working stage. Based on the result of the data analysis, it can be concluded that simultaneously the variable of 5R, rewards, and working safety (independent variables) have positive and significant influence on the productivity in commissioning working stage (dependent variable). The partial test shows that variable of 5R has positive and significant influence on productivity in commissioning working stage. It is relevant to the result of the analysis of rewards and working safety, which have positive and significant influence on productivity in commissioning working stage in construction project of PT Wijaya Karya (Persero) Tbk. The

present study is expected to contribute the educational setting and enrich knowledge in management. The result of the study can be reference of businessmen especially in construction field to achieve working productivity in the level of commissioning. The result of data analysis showed that the implementation of 5R, rewards and working safety have positive and significant influence on productivity on the stage of commissioning. It can be an indicator of project management in PT Wijaya Karya (Persero) Tbk to improve productivity on the stage of commissioning, so that the three factors will be main concentration.

The limitation of the present study was that it was a study investigating productivity on the service sector company, which is construction, on the stage of commissioning. In addition, the present study had only used one company and one division of operational directorate as object of the study. Besides, the future research may be conducted further to the entire operational directorate of some companies and further analysis of the other working stage. The future researcher is also expected to take more variables tested to know their influences on productivity of a certain working stage.

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