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The Influence of Training, Communication and Supervision on Employee Occupational Safety At the Dept Plant Job Site Kaltim Prima Coal PT . Antareja Mahada Makmur, East Kalimantan

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Abstract: The objectives of this study are; 1) to analyze the effect of job training on employee safety; 2) to analyze the effect of organizational communication on employee safety; 3) to analyze the effect of management supervision on employee safety; 4) to identify the most dominant variables in influencing job safety. This study uses a quantitative approach with multiple linear regression analysis method. The population in this study were all employees of the Plant Department of PT. Antareja Mahada Makmur. The sampling technique used purposive sampling with a total of 57 respondents. Data collection was carried out through distributing questionnaires and supporting interviews, while data analysis included validity tests, reliability tests, classical assumptions, and regression tests. The results of this study are; 1) Job training has a positive and significant effect on job safety; 2) Organizational communication has a positive and significant effect on job safety; 3) Management supervision has a positive and significant effect on job safety; 4) Among the three variables, job training is the most dominant variable in improving employee safety. The implications of this study confirm that increasing the effectiveness of training programs, accompanied by open K3 communication and consistent field supervision, can strengthen the work safety culture in the mining sector. Therefore, companies are advised to make continuous training a top priority in their occupational health and safety policies.

Keyword: Training, Communication, Supervision, Occupational Safety.

INTRODUCTION

Human resources with the knowledge, skills, and abilities to complete tasks are needed to support the process of achieving goals. Furthermore, human resources are a crucial component of management because they carry out management tasks to achieve goals.

Therefore, human resources must be empowered to maximize their contribution to the organization.

The ability of an organization to achieve both short-term and long-term goals is measured as success. Human resources in an organization are a key factor for the running of an organization in the present and the development of the organization in the future which is one of the operational factors in addition to technology and equipment, as well as materials and funds (Utama, 2020). The human resource factor is very important, and an organization is responsible for maintaining the quality of work life and developing employees to be willing to give their best contribution to achieve organizational goals. In other words, an organization is required to manage human resources as well as possible to achieve management goals. Organizations must invest in human resource development to help employees improve their knowledge, skills, and abilities in human resource management.

Human resource development is a process of developing the knowledge and potential of employees to achieve individual and organizational goals. This is in line with the notion that (Walimah & others, 2021) human resource development is a process of enhancing human resource capabilities to help achieve organizational goals. Preparing individuals to take on different or higher roles within an organization is known as human resource development. Organizations with effective human resource development programs will have greater competitive strength and be able to compete effectively. Implementing effective human resource development programs can make an organization competitive and have an advantage.

According to (Souhoka & Amin, 2021), training is one way to develop human resources. Education and training are efforts to improve, develop, and shape employees in order to enhance their abilities in facing their activities, which is intended to improve public service. Training, according to , (Mon & Mulyadi, 2021) is instruction provided to new or existing employees related to the basic skills needed when carrying out their jobs. Furthermore, according to , (Haki, 2021) training is said to be a forum for skills development that takes place over a short period of time.

PT Antareja Mahada Makmur is a company which is a coal mining contractor with an open pit mining operation pattern.

PIT. Services include overburden removal, haul road maintenance, pit service, and heavy equipment rentals such as excavators, dozers, dump trucks, graders, and water trucks. All of these are core activities that directly impact occupational safety during the interaction of heavy equipment and traffic in the pit and haul road. (PT Amman Mineral, 2023)

As a mining business actor, the company is obliged to implement Good Mining Engineering Principles and Mining Safety Management System (SMKP) in accordance with the Decree of the Minister of Energy and Mineral Resources No. 1827 K/30/MEM/2018 and the Decree of the Director General of Mineral and Coal No. 185.K/37.04/DJB/2019, while also complying with Government Regulation No. 50/2012 and Law No. 1 of 1970 concerning Occupational Safety. This regulatory framework requires strengthening training, safe work communication and supervision as three managerial tasks that maintain SOP compliance and prevent incidents.

Technically, open-pit mines have a unique hazard pattern. Mine safety literature lists powered haulage as one of the most frequent sources of incidents in surface mines, and Indonesian studies have shown haul road incidents to be the highest contributor (Bellanca & others, 2021). These risk conditions make operator and supervisor competency training, clear communication of work instructions, and oversight of SOP enforcement a logical focus for research, as they are directly related to accident prevention.

PT Antareja Mahada Makmur in East Kalimantan offers various training programs to improve skills and

The professionalism of its employees. The following is an explanation of the objectives of the training program in this company: improving employee skills and professionalism, raising awareness of the importance of occupational safety and health, reducing the risk of work accidents and improving safety in the workplace. In this company there are types of training programs, namely Occupational Safety and Health (K3) Training which covers topics such as hazard identification, job safety analysis, safety risk assessment, and accident investigation, Mining operational training which covers topics such as mining regulations, safety procedures, and the use of heavy equipment, and first aid training which covers topics such as first aid in accidents, cardiopulmonary resuscitation, and the use of fire extinguishers. (Umpain et al., 2024).

From the above opinion, it can provide benefits in improving employee skills and awareness of the importance of occupational safety and health, reducing the risk of work accidents and improving safety in the workplace, increasing productivity and work efficiency, improving the company's reputation and public image. The implementation of the Training Program at PT. Antareja Mahada Makmur is carried out in three ways, namely: The training program is carried out regularly and on schedule, Training is carried out by experienced instructors and has competence in their fields, and Training can be carried out in theory and practice. Thus, the training program at PT Antareja Mahada Makmur aims to improve employee skills and awareness of the importance of occupational safety and health, as well as increase productivity and efficiency. work so that human resource development through education and training can help complete tasks better, which has an impact on employee work safety (Salas et al., 2020).

This research is in line with the research conducted by Ananta (Fahmi, 2015) on training and occupational safety. The results of this study prove that there is a significant influence between the Training Method variable on the Employee Occupational Safety and Health variable, there is a significant influence between the Training Material variable on the Employee Occupational Safety and Health variable. While finally there is a significant influence between the Training Method and Training Material variables simultaneously on the Employee Occupational Safety and Health variable. This research is in line with the research conducted by Dona (Robbins & Judge, 2021). This study aims to analyze the impact of OHS training and leadership on occupational safety behavior. The study was conducted on 51 workers at PT. Triguna Pratama Abadi and used the multiple linear regression method. The research findings show that OHS training has a partial influence on occupational safety behavior, as does the leadership factor. In addition, OHS training and leadership also have a joint influence on occupational safety behavior. (Rostina et al., 2020).

Communication itself is the transmission of information and understanding, using verbal or nonverbal symbols, from one person to another (Suradinata, 2015). This communication can help develop motivation by explaining to employees what to do. how well they work, and what can be done to improve their performance or workers who are below standard (Robbins & Judge, 2022). Communication carried out by two or more people face to face where the sender can convey the message directly, and the recipient of the message responds directly is called interpersonal communication. According to Suharsono and (Astutik, 2019) interpersonal communication is a form of direct face-to-face communication, dialogic between two individuals with individuals, individuals with groups or groups with groups.

The establishment of good interpersonal communication between workers (employees) and superiors (leaders) or vice versa, will obtain a wise policy or decision (not detrimental to subordinates or the company). One of them is the policy in the field of occupational health and safety regulated by the government in the labor law that must be obeyed and implemented by employers or companies and workers as an effort to prevent the occurrence of work-related accidents and occupational diseases by identifying things that have the potential to cause accidents and occupational diseases (Noe, 2020), which aims to create a comfortable and

healthy workplace so that it can be used to reduce the number of risks of accidents and occupational diseases as low as possible. Occupational Health and Safety is basically a need for every human being and is an instinct of every living creature. Poor labor conditions and a high number of work accidents encourage various groups to increase protection for workers, one of which is occupational safety protection (Neal & Griffin, 2021).

One of the occupational safety (K3) factors that is rarely considered is the lack of interpersonal communication from subordinates to superiors or vice versa, which indirectly disrupts a company's productivity. Occupational health and safety are regulated in government regulation number 50 of 2012 concerning the implementation of the Occupational Health and Safety Management System (Labor Law), which includes responsibilities, authority to act, contract reviews, work systems, first aid for accidents, measurement and testing, handling of work problems and training for workers. (Mukhayanah & Setyawan, 2024).

The communication aspect at PT Antareja Mahada Makmur East Kalimantan is very important to ensure the smooth operation of the company and increase awareness of occupational safety and health. The purpose of communication itself is to increase awareness of the importance of occupational safety and health, improve coordination and cooperation between employees and management, and also increase awareness of the company's goals and objectives. The types of communication at PT Antareja Mahada Makmur East Kalimantan are formal communication which includes written communication such as reports, memos, and company policies, and informal communication which includes oral communication such as meetings, discussions, and daily conversations. Communication channels within this company are implemented through regular meetings between employees and management to discuss relevant issues, information systems used to facilitate communication and information sharing, and social media used to promote the company and raise awareness of occupational safety and health (Hakim et al., 2024).

Communication has benefits in increasing awareness of the importance of occupational safety and health, improving coordination and cooperation between employees and management, increasing awareness of the company's goals and objectives, and improving the company's reputation and public image. The implementation of communication at PT Antareja Mahada Makmur East Kalimantan is carried out regularly and on schedule, communication is carried out in a clear and effective manner, and pays attention to the needs and preferences of employees and management. Thus, the communication aspect at PT Antareja Mahada Makmur East Kalimantan is very important to ensure the smooth operation of the company and increase awareness of occupational safety and health. (Goetsch, 2020).

This research is in line with research conducted by Winda Astutik (2019) entitled *The Influence of Communication, Motivation, and Occupational Safety on the Productivity of PLN West Surabaya Employees*. The sample taken was 48 respondents. The results of the study concluded that the validity test of all variable indicators was proven valid because the calculated r value was $> r$ table. For the reliability test of all variables, the Cronbach's alpha value was > 0.6 , thus declared reliable. Simultaneous hypothesis testing was proven to have an effect (Daft, 2021).

According to Irham Fahmi (2012), supervision can generally be defined as a way for an organization to achieve effective and efficient performance. efficient, and further supports the realization of the organization's vision and mission. Supervision is a form of observation that is generally carried out comprehensively, by making a comparison between what is stipulated and what should be implemented. According to Kadarisman in Jufrizen (2016) "supervision is an uninterrupted process to ensure that the implementation of tasks, functions and authorities do not deviate from the rules that have been set in order to achieve organizational goals", According to Sukarna in (Clarke, 2022)"supervision is corrective actions in the implementation of work so that all activities are in accordance with the established plans, guidelines and instructions, so that the predetermined goals can be achieved". Meanwhile, according to

Admosudirjo in Feriyanto and Triana in (Bond & Craps, 2020)"supervision is the whole of the activities that compare or measure what is being or has been implemented with criteria, standard norms, or plans that have been previously determined".

Supervision at PT Antareja Mahada Makmur, East Kalimantan is crucial for ensuring occupational safety and health, as well as improving the company's efficiency and productivity. The objectives of supervision are to improve occupational safety and health, increase the company's efficiency and productivity, and reduce the risk of workplace accidents and company losses. Supervision can be direct, conducted by supervisors or managers, or indirect, conducted through information systems/technology. The supervisory aspect at PT Antareja Mahada Makmur, East Kalimantan, is occupational safety supervision, which is carried out to ensure occupational safety and reducing the risk of workplace accidents, quality control to ensure the quality of the company's products or services, and productivity control to improve the company's productivity and efficiency. Therefore, the supervisory aspect at PT Antareja Mahada Makmur East Kalimantan is crucial for ensuring occupational safety and health, as well as improving the company's efficiency and productivity.

From the definition above, it can be concluded that supervision is an activity of observing and evaluating the implementation of employee work that has been determined by the company, and if there is a deviation in the company, it can be immediately identified quickly so that action can be taken. According to Handoko in Aediandisyah, (Balaev, 2020)supervision is an activity that compares or measures what is being or has been carried out with the criteria of standard norms or established plans. Supervision carried out by superiors is a comprehensive supervision of the implementation of activities by subordinates with the aim that superiors know the real activities and every aspect of the implementation of tasks or the environment of each organizational unit and do not deviate and efforts to achieve the goals and targets that have been set. If a deviation occurs, superiors immediately take the necessary corrective steps. (Ahmad et al., 2024).

This research is in line with research conducted by (Achmad et al., 2024)entitled the influence of work discipline and supervision on employee occupational safety and health at PT. Riau Crumb Rubber Factory Pekanbaru. The results of the study indicate that there is an influence between work discipline and supervision on employee safety and health. This study is in line with (Putri, 2014)the one entitled The Influence of Supervision, Work Environment and Discipline on Occupational Health and Safety at PT. Indah Kiat Pulp and Paper, Tualang District, Siak Regency. The population is all employees of PT. Indah Kiat Pulp and Paper Perawang, totaling 1280 people. In sampling, the author used a simple random sampling method, totaling 93 people. In this study, the data obtained will be processed with a multiple linear regression model. The regression method can be used to show how independent variables affect the dependent variable. From the results of the study, they jointly have an influence on the dependent variable. This means that the control variables, work environment and discipline have a significant effect on the occupational health and safety of employees at PT. Indah Kiat Pulp and Paper Perawang. (Syamila et al., 2024).

Workplace accidents in Indonesia are trending upward. The Ministry of Manpower reported 462,241 cases between January and December 2024 (Kemnaker, 2025). The 2023 figure released by the Social Security Agency (BPJS Ketenagakerjaan) was around 370,000 cases (BPJS Ketenagakerjaan, 2024). This data underscores the urgency of cross-sector risk management, including in mining.(Oktaviani & Pujiyanto, 2023)

Regulatoryly, Law No. 1 of 1970 requires employers to guarantee worker safety (Law 1/1970), and Government Regulation No. 50 of 2012 mandates the implementation of an Occupational Health and Safety Management System (OHSMS) in companies (PP 50/2012). Both serve as the legal basis for accident prevention being an obligation, not an option. Globally, the ILO confirms that mining is among the most dangerous sectors, with its global fatality rate estimated to be four times higher than the average for all sectors (ILO, 2023). This

explains why mining operations must maintain occupational health and safety standards above the average for other industries. Specifically for Indonesia, a publicly reported report from the Directorate General of Mineral and Coal (DG Mineral and Coal) at the Ministry of Energy and Mineral Resources (MEMR) recorded 49 mining accidents with fatalities in 2024, an increase of 48 from 2023 (DG Mineral and Coal/MEMR, 2024). This demonstrates the continued significant safety challenges in this sector.

In open-pit mining, accident patterns are often related to the interaction of heavy equipment, particularly haul/dump trucks, excavators, and bulldozers, with haul road conditions, as well as human factors. Studies and technical reports indicate recurring factors such as blind spots on large units, inadequate road conditions, operator speed/fatigue, and inadequate maintenance.(Maslida & Wajiran, 2024)

The national policy framework places this under ESDM Ministerial Regulation No. 26/2018 concerning “Good Mining Principles” and Director General of Mineral and Coal Decree No. 185.K/37.04/DJB/2019 concerning technical guidelines for mining safety, which emphasize the importance of competence and training, communication, safe work, and supervision and enforcement of SOPs as safety barriers.(Mathis et al., 2021).

From the explanation above, several phenomena are identified, highlighting the extremely dangerous environmental conditions in mining areas. Mining workers often use heavy equipment that is potentially dangerous if not operated properly or without adequate training. This can lead to workplace accidents, gas explosions, and landslides. These problems impact employees, including exposure to dust and hazardous chemicals, which can lead to occupational diseases such as pneumoconiosis. Workplace accidents can also result in significant financial losses for companies. Mining companies must implement strict safety standards and ensure that all workers comply with established procedures. (Karim et al., 2025).

Safety training should be an integral part of new employee orientation programs and conducted periodically. Furthermore, companies should conduct regular safety audits to identify potential hazards and ensure all equipment is functioning properly, as well as utilize modern technology to improve safety on mining sites (Husnia, 2024).

The current condition regarding employee work safety is still not optimal because there are employees who have not completed education and training according to their service level and the suitability of their educational and training background with their field of work. This is the basis for consideration to explain the main causes of employees being able to work safely, by examining the influence of Training, Communication, and Supervision on Employee Work Safety at the Dept. Plant of PT. Antareja Mahada Makmur, East Kalimantan, so that employees can perform well in the future. (Dessler, 2020).

METHOD

Design Study

The method used in this study is a quantitative method with a multiple regression analysis design. Quantitative research methods have a very broad scope. In general, quantitative research methods are divided into two large dichotomies, namely experimental and non-experimental. Experimental can be further divided into quasi-experimental, single subject, etc. While non-experimental in the form of descriptive, comparative, correlational, survey, ex post facto, historical, etc. (Sugiyono, 2017) Furthermore, to process the collected variable data using the SPSS (Statistical Product and Service Solutions) software data processing program. The use of this method is to see the influence between variables in detail. Numerical data will describe the magnitude of the influence between the independent variable (X) in this case Training, communication, and supervision with the dependent variable (Y) which in this case is work safety.

Room Scope

Study This in a way special discuss in the field Source Power Man specifically research about safety works at PT Plant Dept. Antareja Mahada Makmur, East Kalimantan. which is influenced by training , communication , and supervision .

Location Study

Study implemented in the Plant Department of PT Antareja Mahada Makmur, East Kalimantan. This location chosen Because characteristics operational , operations tool weight , pattern shift work , as well as interaction cross function that makes training (X1), communication (X2), and supervision (X3) are crucial in guard safety work (Y). With complexity tasks and risks relative work height , context This relevant For test to what extent is the quality training , effectiveness current information , and firmness supervision influential to behavior safety

Population And Technique Retrieval Sample

Population is generalization consisting of on object with quality and characteristics certain conditions determined by researchers For studied and then withdrawn conclusion (Sugiyono , 2015). With Thus , the population is overall subject in research . In study this , the population used is all over employees in the Plant Department of PT. Antareja Mahada Makmur, East Kalimantan, which consists of 57 people . The technique taking samples used is technique census , namely technique determination sample with take all over member population as a unit of analysis research . According to Riduwan (2015), sample is part from population that has characteristics certain For researched , while according to Sugiyono (2017), census is technique taking sample with involving all over member population as sample study.

Variables Study

Identification Variables

Identification variables in study This consists of from variables dependent and variable independent . Variable dependent in study This is safety work (Y). Meanwhile that , variable independent covering training (X1), communication (X2), and supervision (X3), each of which is suspected own influence to safety Work .

Definition Conceptual Variables

Safety Work is activity protection employee in a way comprehensively to avoid from accident during operate work . According to (Kasmir, 2016), safety and health Work is effort company For keep employees No experience accident moment working . While That ,(Sedarmayanti, 2017) state that safety and health Work is form supervision to human , machine , material, and method work that includes environment work so that workers No experience injury . Training is a process for forming and equipping employee through improvement skills , abilities , knowledge , and behavior Work .(Tobari, 2015) explain that training aim increase competence employees , while (Suradinata, 2015) emphasize that education and training is a learning process For increase knowledge , skills , attitudes , and behavior in carry out assignment . Communication is an exchange process information between individual or group For each other understand and influence One each other.(Robbins & Judge, 2021) state that communication is a complex and contextual process that is influenced by factors cultural , social , and psychological . As for supervision is effort For ensure that work walk in accordance plan .(Fahmi, 2015) define supervision as method organization realize effective and efficient performance , while (Robbins & Coulter, 2016) state that supervision covering activity evaluate results work and do action repair to fit with plans that have been set .

Definition Operational Variables

Variables in study This consists of from safety work (Y), training (X1), communication (X2), and supervision (X3). Safety Work defined as behavior employee in guard safety , which is reflected from compliance regarding SOP and use of PPE, participation in K3 activities , as well as reporting condition dangerous . Variable This viewed as results from effectiveness on-site training , communication and supervision Work (Sedarmayanti, 2017). Training is a learning process that is designed in a way systematic For increase knowledge , skills , and attitudes Work employees , with indicator covering material , ability instructors , methods used , and evaluation implementation ((Kasmir, 2016). Communication is an exchange process information in organization that aims to make work can understood and implemented in a way consistent , with indicator in the form of openness , order , opportunity participation , quality communication , as well as use technology communication (Robbins & Judge, 2021). Temporary that , supervision is a managerial process For ensure work walk in accordance standard through monitoring and action corrective , with indicator covering determination standards , measurement , comparison , and action repair (Robbins & Coulter, 2016).

Type And Data source

Study This using qualitative and quantitative data . Qualitative data in the form of non - numerical information obtained from various source like books , journals , documentation and references related others . Meanwhile that is , quantitative data is data in the form of analyzed numbers use method statistics , as put forward by (Sugiyono, 2015). Internal data sources study This consists of from primary data and secondary data . Primary data is obtained in a way direct from location study through distribution questionnaire to respondents . While secondary data obtained from various literature like books , journals , documents , and archives related official with employees in the Plant Department of PT. Antareja Mahada Makmur, East Kalimantan.

Instrument Study And Test Instrument Study

Instrument research used is questionnaire with Likert scale (1–5), starting from very to very agree to strongly agree , to measure variables training (X1), communication (X2), supervision (X3), and safety work (Y). Every variables explained to in a number of indicators and statement items , such as materials , instructors , methods , and evaluation of training ; openness , regularity , participation , quality , and use technology in communication ; determination standards , measurements , comparisons , and actions in supervision ; and SOP compliance , K3 participation , and reporting danger to safety Work

Instrument testing done through validity and reliability tests . Validity test use product moment correlation (Pearson) with level significance 0.05, where the item is declared valid if r count $>$ r table or significance $<$ 0.05. Meanwhile that , reliability test use Cronbach's Alpha coefficient for evaluate consistency answer respondents , with criteria that instrument stated reliable If Cronbach's Alpha value is higher big from r table .

Technique Collection Data

Data collection techniques in study This refers to (Sugiyono, 2017), which includes questionnaires , interviews , and documentation . Questionnaire used as instrument main For obtain primary data by method distribute a questionnaire written to respondents , so that researchers can know perception , attitude , and response they in a way systematic . Interview done For dig information more deep as well as complete the data obtained from questionnaire through the questioning process answer direct with respondents , so that the data produced become more comprehensive and accurate . While that , documentation used For collecting secondary data through recording various documents , archives , reports , and findings relevant fields , in order to support and strengthen results study .

Technique Analysis Data

Data analysis in study This use analysis descriptive quantitative and assumption testing classic . Analysis descriptive quantitative aim For describe condition variables study through average value , standard deviation , median, mode, minimum and maximum scores , which are then categorized become high , medium , and low based on mean and standard values deviation (Sugiyono, 2017).

Next , an assumption test is carried out classic before analysis regression multiple tests , which include normality tests , multicollinearity tests , and heteroscedasticity tests . Normality tests used For ensure the data is normally distributed , usually through histogram (Ghozali, 2018a). Multicollinearity test aim know There is whether or not connection between variables independent with see tolerance value (>0.10) and VIF (<10). Meanwhile that is , heteroscedasticity test used For test similarities residual variance , where a good regression model No show symptom heteroscedasticity .

Hypothesis Testing

Analysis multiple linear regression in study This equipped with simultaneous test (F-test), partial test (t-test), and coefficient determination (R^2). The F test is used For know influence variables independent in a way together to variables dependent , with criteria significant If P- value < 0.05 or F- count $> F$ - table . The t-test is used For know the influence of each variable independent in a way partial , with criteria significant if P-value < 0.05 or t-count $> t$ - table . Meanwhile that , coefficient determination (R^2) is used For measure model capabilities in explain variation variables dependent , where values close to 1 indicate ability increasingly clear explanation Good (Ghozali, 2018).

RESULTS AND DISCUSSION

Overview , Duties , and Functions

Object study is Plant Department of PT. Antareja Mahada Makmur (PT. AMM) in East Kalimantan, a company contractor mining coal with method mine open . Activities its operations covering peeling land cover , maintenance road transport , pit service, and management tool weight . All activity the own risk tall to safety work , so that The Plant Department plays a role important in ensure operational walk effective and safe . The company also implements regulations safety such as SMKP and K3, which emphasize importance training , communication , and supervision as the main pillar in prevent accident Work .

Structure Organization and Work Procedures

The Plant Department is under directorate operational and led by the head department , with work units like operation field , maintenance , and K3. System Work use shift pattern with coordination intensive between units. Work procedures includes safety briefing , distribution tasks , reporting , and inspection routine . Structure This ensure function training , communication , and supervision walk integrated For support safety Work .

Respondent Characteristics

Respondents in study This is employee PT. AMM Plant Department in East Kalimantan with sample size as many as 57 people . Characteristics of respondents in this study seen based on type gender, age, and level of education last , which is presented in the table following.

Table 3 Respondent Characteristics

Characteristics	Category	Amount	Percentage
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Type Sex	Man	46	80.7%
	Woman	11	19.3%
Age	< 25 years	8	14.0%
	25–34 years	27	47.4%
	35–44 years	16	28.1%
	≥ 45 years	6	10.5%
Education	High School/Vocational School	29	50.9%
	D3	12	21.1%
	S1	16	28.1%

In a way general , respondents dominated male and is at the age productive (25–45 years), with background behind education the majority of high school/vocational school students. Most of them has follow K3 training , as well as show attitude positive to importance safety work . However , still required improvement in aspects training and communication For strengthen implementation of K3 in the environment Work .

Results Analysis Research

Validity Test

Before done analysis main instrument study tested through validity and reliability tests For ensure data quality . Validity test use method Pearson Product Moment correlation with compare r- calculated and r- table values at the level 5% significance . Test results show that all questionnaire items on the variables training (X1), communication (X2), supervision (X3), and safety work (Y) has r - value more big from r- table (0.216), so that all items are declared valid. With Thus , the instruments used has capable measure variables study in a way proper and appropriate used in study .

Reliability Test

Reliability test in study This use Cronbach's Alpha coefficient with SPSS 26 assistance . Test results show that all over variables , namely training (0.663), communication (0.852), supervision (0.768), and safety work (0.485), has Cronbach's Alpha value is higher big from r- table (0.216). With thus , it can concluded that all over instrument study stated reliable , so that capable give consistent and reliable results trusted .

Descriptive Statistical Analysis

Analysis descriptive show that amount respondents as many as 57 people, with minimum and maximum values of each variable that is training (10–20), communication (10–21), supervision (10–20), and safety work (6–9). Average value in a row is 15.44 (training), 17.53 (communication), 15.59 (supervision), and 12.46 (safety) work), with standard relative deviation small , so that shows sufficient data homogeneous .

Besides that is , the skewness and kurtosis values for all variables approach zero , which indicates that the data is normally distributed . With thus , it can concluded that the research data worthy used For analysis advanced Because has fulfil assumptions normality .

Training (X1)

Based on results analysis descriptive variables communication (X2), it is known that communication consists of of five indicators , namely openness , order , opportunity participation , difficulty communication , and use technology communication . All indicator own relative average value well , with mark highest on occasion participation (3.36) which shows existence room for employee For involved active in communication . Indicators other like openness (3.25), order (3.23), difficulty communication (3.25), and use technology (3.25) is also in the category good , which indicates that communication in the company has walk Enough effective , smooth , and supported by utilization technology . In overall , variable communication own average value of 3.27 which is classified as good , so can concluded that the communication process in organization Already effective and capable support smoothness operational as well as safety Work .

Communication (X2)

Based on results analysis descriptive variables communication (X2), it is known that communication consists of of five indicators , namely openness , order , opportunity participation , difficulty communication , and use technology communication . All indicator own relative average value well , with mark highest on occasion participation (3.36) which shows existence room for employee For involved active in communication . Indicators other like openness (3.25), order (3.23), difficulty communication (3.25), and use technology (3.25) is also in the category good , which indicates that communication in the company has walk Enough effective , smooth , and supported by utilization technology . In overall , variable communication own average value of 3.27 which is classified as good , so can concluded that the communication process in organization Already effective and capable support smoothness operational as well as safety Work .

Supervision (X3)

Based on results analysis descriptive variables supervision (X3), it is known that supervision consists of from four indicators , namely set standards , measurement , comparing , and performing action . All indicator show high average value , with mark highest on the indicator measurement (3.86), followed by set standard (3.80), compare (3.78), and perform action (3.64). This is show that the monitoring process in the company has walk with okay , let's start from determination standard work , evaluation performance , up to action corrective . In overall , variable supervision own average value of 3.77 which is classified as good , so can concluded that system supervision at PT Antareja Mahada Makmur East Kalimantan has effective and supportive smoothness operational as well as safety Work .

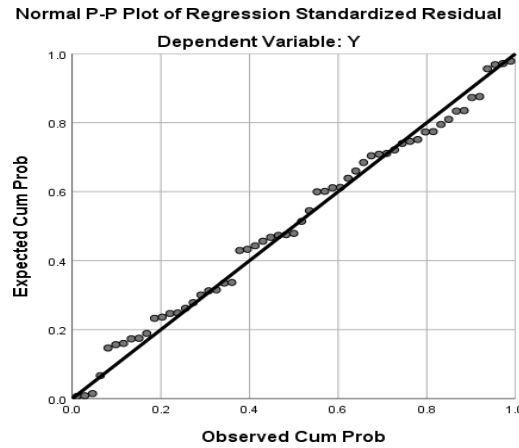
Safety Work (Y)

Based on results analysis descriptive variables safety work (Y), known that variables This consists of from three indicator main , namely compliance towards SOP, participation in K3 activities and reporting danger . Indicator SOP compliance has the highest average value (4.13) which shows level compliance very good employees . Indicators participation in K3 activities are also classified as tall with average value of 3.93, which reflects involvement active employee in activity safety work . Meanwhile that , indicator reporting danger get the average value is 3.64, which means Already walk Enough Good although Still need improved . In overall , variable safety Work own average value of 3.90 which includes category high , so that can concluded that implementation safety work in a company has walk effective and capable create environment safe work as well as support performance employee .

Test Classic Assumptions

Normality test

The data normality test is intended in matter This is For For test whether in the regression model residual variables are normally distributed . The way to detect whether the residuals are normally distributed or not no , that is with use analysis graph . Analysis the graph used For test data normality is Normal p-plot graph . If the data is around the diagonal line , the data is normal and vice versa. if the data is spread out and not is around the diagonal line then the data is said to be not normal. For the results of the p-plot normal graph test can be presented in the picture under :



Source : Processed results data SPSS 26

Figure 2 Normality Test Results

Based on the SPSS 26 output in Figure 2 above , you can see that dot, dot, dot plotting in the image " Normaal PP Plot og Standardized Residual Regression " always follow and approach the diagonal line . Therefore that , as base or guidelines taking decision in the normality test probability plot technique can concluded that residual values are normally distributed . With thus so assumptions normality For residual value in analysis regression multiple in study This can fulfilled .

Multicollinearity test

This process is essentially intended For see what is the regression model there is connection between independent variables . The test can done with method see how much big improvement variety from coefficient estimator regression compared to with variables orthogonal free If connected linearly . For see whether There is or whether or not happen multicollinearity in the data is mark tolerance more than 0.10 and the VIF value is less out of 10 then can it is said No happen multicollinearity . Below This display multicollinearity test results as as follows:

Table 13 Results Multicollinearity Test

Model	Unstandardized Coefficients		Coefficients ^a			Collinearity Statistics		
	B	Std. Error	Standardized Coefficient	t	Sig.	Tolerance	VIF	
1	(Constant)	6,151	2,538		2,424	.019		
	X1	.228	.094	.277	2,418	.019	.743	1,346
	X2	.159	.051	.337	3.116	.003	.833	1,201

X3	.199	.083	.291	2,389	.020	.660	1,515
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Dependent Variable: Y

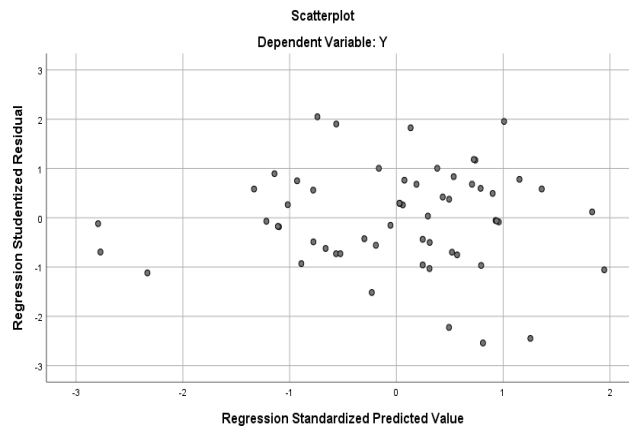
Source ; Processed results data SPSS 26

Based on Table 13 output of SPSS 26 “Coefficients” in Collinearity Statistics is known Tolerance value for variables Training (X1), Communication (X2) and variables Supervision (X3) is 0.743, 0.833 and 0.660 more big of 0.10. Meanwhile , the VIF value for variables X1, X2 and X3 are 1.346, 1.201 and 1.515 < 10.00. Then refers to the taking decision in the multicollinearity test can concluded that No happen symptom multicollinearity in the regression model .

Heteroscedasticity Test

According to Ghozali (2016), heteroscedasticity test done For know whether in the regression model happen inequality residual variance of One observation to observation others . If the residual variance is still or constant , then condition the called homoscedasticity , whereas If different residual variances called heteroscedasticity . Good regression model is the one that is not experience heteroscedasticity or fulfil assumptions homoscedasticity , so that results estimate become more accurate and can trusted .

In study this , heteroscedasticity test done use analysis graph , namely with see pattern distribution points on the scatterplot graph between mark prediction (ZPRED) with residual (SRESID). If dot, dot, dot spread in a way random , no form pattern certain , as well as spread above and below axis zero , then can concluded No happen heteroscedasticity . On the other hand , if there is pattern certain like form lines, waves , or pattern tapered , then show existence symptom heteroscedasticity in the regression model .



Source : Processed results data SPSS 26

Picture 3 Results Heteroscedasticity Test

1). Data points are spread above and below or around number 0; 2). Distribution data points are not form pattern wavy widen Then narrowing and widening back ; 3). Distribution data points are not patterned . With thus can concluded that No happen problem heteroscedasticity so that the regression model can fulfilled .

Analysis Results Multiple Linear Regression

For test hypothesis research , used analysis multiple linear regression with variables dependent Safety Work (Y) and three variables independent : Training (X1), Communication (X2), and Supervision (X3). Through analysis this , can known influence simultaneous third variables free to variables bound , influence partial of each variable free , and which variable is dominant its influence . The following served summary results analysis regression , which consists of on the output of Model Summary, ANOVA, and Coefficients.

Analysis Coefficient Determinant (R2)

Constant value (R2) in special evaluate how much Far model performance in explain forms bound . The value as intended above namely the small R2 means ability variables independent in explain variation form dependent very limited (Imam Ghozali , 2009). For coefficient test results determinant (R2) can presented in the table under This .

Table 14 Coefficient Determinant (R2)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694 a	.482	.453	1,970

Source : Processed results data SPSS 26

Based on The SPSS output results in Table 14 "Model Summary" above , are known mark coefficient determination or R Square of 0.482, the value This originate from squaring mark coefficient correlation or “R” which is 0.694 X 0.694

= 0.482. The size number coefficient determination (R Square) is 0.482 or The same with 48.2%. This figure means that variables Training , communication and supervision in a way simultaneous influential to variables Safety work (Y) of 48.2%. Meanwhile the remainder (100%-48.2% = 51.8%) is influenced by other variables outside equality regression This or variables that are not researched .

Test Significance Simultan (Test F)

For test hypothesis simultaneous , the F statistical test is used in the ANOVA table . The F test is used For test hypothesis alternative (H5) namely allegedly that variables Quality services (X1), Products (X2), Prices (X3), and Location (X4) in simultaneous influential in a way significant to variables Satisfaction Consumer (Y). The results of the F test calculation can be presented in table 15 below This :

Table 15 F Test Results

Sum Model	of Squares	df	Mean Square	F	Sig.	
1	Regression	191,728	3	63,909	16,460	.000
	Residual	205,781	53	3,883		b
	Total	397,509	56			

a.Dependent Variable: Y

b.Predictors: (Constant), X3, X2, X1

Source : Processed results data SPSS 26

Hypothesis study This For test hypothesis H5 is as following ;

Ha: There is an influence in a way simultaneous Training (X1), Communication (X2), and Supervision (X3) towards Safety Work (Y) at Dept Plant PT. Antareja Mahada Makmur, East Kalimantan.

Ho : No There is influence in a way simultaneous Training (X1), Communication (X2), and Supervision (X3) towards Safety Work (Y) at Dept Plant PT. Antareja Mahada Makmur, East Kalimantan.

Basis of taking For testing hypothesis This is as following ;

1.If the probability > 0.05 then Ho is accepted It means variables influence in a way simultaneous Training (X1), Communication (X2), and Supervision (X3) simultaneously No

influential to Satisfaction Work (Y). 2.If the probability value is < 0.05 then H_a is accepted . It means variables Training (X1), Communication (X2), and Supervision (X3) in general simultaneous influential to Satisfaction Work (Y).

The results of the F test were obtained mark F count $(16.460) > (2.20)$ F table and value probability $(0.00) < (0.05)$ sig value , then results study This reject hypothesis H_0 and accept hypothesis H_a which means There is influence influence in a way simultaneous Training , Communication , and Supervision in a way simultaneous influential to Safety Work .

Test Significance Partial (Test t)

The t-test is used For test significant the influence of each variable independent consisting of from Training , Communication , and Supervision towards Safety Work . The results of the t-test can be presented in table 16 below This:

Table 16 Summary of t-Test Results

Model	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error		t	Sig.	
1	(Constant)	6,151	2,538		2,424	.019
	X1	.228	.094	.277	2,418	.019
	X2	.159	.051	.337	3,116	.003
	X3	.199	.083	.291	2,389	.020

Based on partial test results (t-test), all hypothesis research (H_1 , H_2 , and H_3) stated accepted . Variable training (X1) has an effect significant to safety work (Y), which is proven with mark thitung (2.418) more big from ttable (0.678) and value significance $0.019 < 0.05$. Variable communication (X2) also has an effect significant to safety Work with mark thitung $(-3.116) > t$ tabel and significance $0.019 < 0.05$. Likewise , the variable supervision (X3) shows influence significant to safety Work with mark thitung $(-2.389) > t$ tabel and significance $0.020 < 0.05$. With thus , it can concluded that training , communication , and supervision each have their own influence significant to safety Work employee .

Variables Dominant

Study this also aims For determine the most dominant variable influence safety work , namely between training , communication , and supervision . Determination variables dominant done with see mark beta coefficient (β) in the t-test, with criteria mark the biggest or the one that is most distant zero (without) notice sign positive or negative). Variable with mark largest beta coefficient considered own the strongest influence to safety Work Because has standardized in the same units , so that can compared to in a way direct between variable.

Table 17 Results Test Variables Domain

Variables	Unstandardized Coefficient (β)	Information
Training	.228	Influential significant
Communication	.159	Influential significant
Supervision	.199	Influential significant

Source ; Processed results data SPSS 26

Based on results analysis , variables training (X1) has mark beta coefficient (β) of 0.228 which is mark highest compared to variables communication and supervision . With thus , it can concluded that training is the most dominant variable influential to safety work , because give contribution relatively strongest in increase safety Work employee.

Influence Training to Safety Work

Training proven influential positive and significant to safety work . This is in accordance with HR and K3 theory which states that training increase knowledge , skills , and attitudes Work so that capable reduce risk accident . Findings this is also supported study previously confirmed importance training in form competence and behavior safe . The implication is that the company need Keep going increase quality training through update materials , methods interactive , as well as combination formal training and practice field .

Influence Communication to Safety Work

Effective communication proven increase safety work , because help delivery information , instructions and feedback related to K3 in general clear . This result in line with theory behavior organization and supported study previously as well as K3 regulations that emphasize importance communication . The implication is that companies need strengthen system communication through safety briefings , information media , and communication two direction between management and employees .

Influence Supervision to Work Safety

Supervision also has an impact positive significant to safety work . This is in accordance with theory management stated that supervision ensure compliance to standards and procedures work . Research previously also supported that supervision is factor important in success implementation of K3. The implication is that the company need increase intensity supervision through inspection routine , safety patrol, and reinforcement the role of supervisor in uphold discipline Work .

Variables Dominant Influence Work Safety

Training is the most dominant variable influence safety work . This is show that improvement competence and awareness employee through training become key main in prevent accident . The implication is that the company need prioritize investment in K3 training programs as a long-term strategy long For create culture safety strong work .

CONCLUSION

Based on results analysis , can concluded that training , communication , and supervision each have an impact positive and significant to safety Work employees , so that all over hypotheses (H1, H2, and H3) are accepted . Training increase K3 competence and awareness , effective communication strengthen understanding and coordination work , while supervision ensure compliance to procedure safety .

Between third variables said , training is the most dominant factor in influence safety Work based on mark the largest beta coefficient . In terms of simultaneous , third variables the capable explain variation safety Work with good , so K3 improvement is necessary done in a way integrated through strengthening training , communication , and supervision .

In a way overall , condition variables in study This is in the category good , and findings This can become base for company in improve safety programs Work as well as as reference For study furthermore.

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