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The Influence of Safety Leadership, Safety Motivation, and Working Condition on Safety Behavior at PT XYZ

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Abstract
Coal mining industry is an industry that can be classified as a high-risk industry. Work accident in this industry can happen to all workers any time. PT XYZ, as a company that provides contractor services in coal mining industry, also records work accident in its workplace. This research aims to determine and analyze the influence of safety leadership, safety motivation, and working condition on safety behavior at PT XYZ. To achieve this goal, measurements will be conduct to measure the dimension from each variable. The method that will be used in this research to achieve this goal is to develop and test a structural equation modelling (SEM) on a questionnaire that has been distributed to samples from the population. The research sample consisted of 262 operators who worked in Production Department PT XYZ. The findings showed that safety leadership and working condition have a positive and significant impact on safety behavior. Meanwhile, the result also showed that safety motivation did not have a significant impact on safety behavior in PT XYZ. The results of this study provide an overview of the real conditions currently occurred in PT XYZ. The findings also provide guidance for leaders in the coal mining industry on the behaviors and policies they should adopt to improve safety-related performance.

Keywords— Safety Leadership; Safety Motivation; Working Condition; Safety Behavior

Abstrak
Industri pertambangan batubara merupakan industri yang memiliki resiko sangat tinggi. Insiden kecelakaan kerja dapat menimpa semua pekerja dan dapat terjadi kapan saja. PT XYZ sebagai perusahaan yang bergerak di sektor penyedia jasa kontraktor pertambangan batubara juga tidak lepas dari insiden kecelakaan kerja. Penelitian ini memiliki tujuan untuk mengetahui dan menganalisis pengaruh *safety leadership*, *safety motivation*, dan *working condition* terhadap *safety behavior* di PT XYZ. Untuk mencapai tujuan ini, akan dilakukan pengukuran terhadap dimensi yang membentuk masing-masing variabel. Metode yang akan digunakan oleh peneliti dalam mencapai tujuan tersebut adalah dengan mengembangkan dan menguji model persamaan struktural terhadap kuesioner yang sudah disebarkan kepada sampel dari populasi. Sampel penelitian terdiri dari 262 orang karyawan yang bekerja di Departemen Produksi PT XYZ. Hasil penelitian menunjukkan bahwa *safety leadership* dan *working condition* memiliki pengaruh yang positif dan signifikan terhadap *safety behavior*. Hasil penelitian juga menunjukkan bahwa *safety motivation* tidak memiliki pengaruh signifikan terhadap *safety behavior*. Penelitian ini menawarkan pedoman bagi para pemimpin dalam industri pertambangan batubara tentang perilaku dan kebijakan yang harus diambil untuk meningkatkan kinerja terkait keselamatan.

Kata kunci— *Safety Leadership; Safety Motivation; Working Condition; Safety Behavior*

I. INTRODUCTION

Coal mining industry is an industry that can be classified as a high-risk industry, where work accident can occur on a small scale or become a tragic disaster with many deaths (Tworek et al, 2018). Work accidents can occur at any time in the mining industry and can happen to anyone who works in the mining industry. Based on Heinrich (1980) in his book, 88% of work accident occur due to unsafe behavior, 10% of work accident are caused

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by unsafe conditions in the work area, and 2% of work accident are caused by things that cannot be prevented or can be said to be fate. This research is in line with research conducted by Hong and Gui (2017) which found that work accident that occurred were significantly influenced by unsafe behavior. Thus, theory and research results both show unsafe behavior as a very strong determining variable that cause work accident.

The high number of work accident at PT XYZ during 2023 is a reflection of coal mining activities as a high risks industry. PT XYZ is a coal mining service contractor company located in Barunang Village, Kapuas Regency, Central Kalimantan Province with a total work area of 24,980 Hectare. PT XYZ has recorded 23 work accident as of September 2023. Even though the threshold tolerated by PT XYZ is a maximum of 9 incidents, the number of work accidents has increased significantly from 2021 and 2022, where in those 2 years there were 16 work accident incidents. Not only has the number of accidents that can be tolerated for 2023 exceeded, but also the safety performance in 2023 is even worse than the previous 2 years. From the results of investigations that have been carried out, there are a total of 55 basic causes that have caused 23 work accident up to September 2023. So, from this data it can be seen that the basic causes do not stand alone but have an interrelated relationship between one category and another. Based on **Fig. 1**, unsafe behavior from employee contributed to 20 work accidents in 2023. This number is much greater than the work accidents that occurred due to unsafe behavior in 2021 and 2022. From the results of the researcher's summary, it was found that in 20 work accident related to unsafe behavior, there were 19 incidents that were based on a lack of safety motivation, 14 incidents that were based on a lack of supervision and leadership of the group leader, 10 incidents that were based on unsafe working conditions, 3 incidents based on lack of ability to operate the unit, and 1 incident caused by lack of knowledge. This was reinforced through interviews conducted by researchers with the Safety, Health, & Environment (SHE) Department Head of PT XYZ to find out what factors were the causes of unsafe behavior that occurred in the production department of PT XYZ. The results obtained from the interview were that the main factor in the occurrence of work accident incidents was the lack of supervision and concern from the group leader to reprimand his subordinates when deviations in behavior occurred. Another factor that causes unsafe behavior is the wrong motivation of employees to take shortcuts in dealing with high work demands and in dealing with dangerous conditions encountered so that they can be overcome quickly.

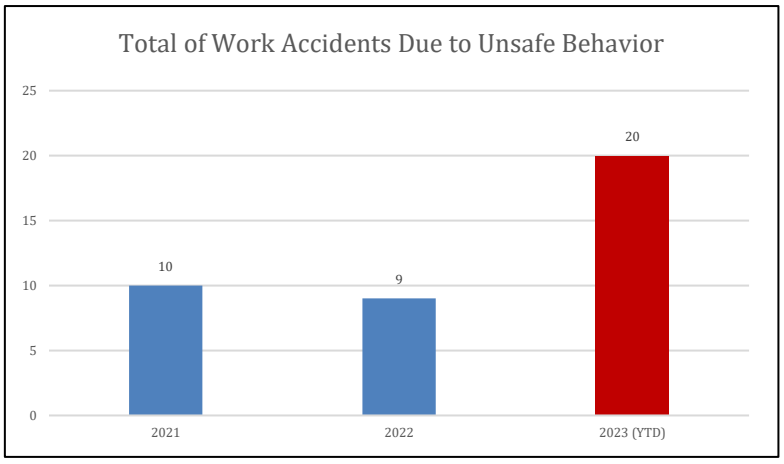

Fig. 1. Total of Work Accidents Due to Unsafe Behavior

The phenomenon and data that have been collected are also strengthened by previous research that has been carried out regarding the significant influence of safety leadership, safety motivation, and working conditions on unsafe behavior. According to research conducted by Basahel (2021), safety leadership is one of the factors that greatly influences safety behavior, where effective safety leadership with a strong management commitment to safety is a requirement for increasing safe behavior and will help to improve safety performance. Then, research conducted by Wu et al (2008) showed that safety leadership or the process of leader supervision in routinely reminding subordinates to work according to procedures is a very significant factor in influencing safety behavior. In addition, research conducted by Aktas dan Kagnicioglu (2023) also showed that safety leadership is one of the variables that has a significant influence on a person's safety behavior. This influence is also strengthened through research conducted by Subramaniam et al (2023) that showed that safety leadership is one of the factors that has a very significant influence on safety behavior. Therefore, it is very important for safety leadership to be carried out in further research regarding its influence on safety behavior.

Meanwhile, the influence of safety motivation on safety behavior can be seen through research conducted by Christian et al (2009), where safety motivation is closely related to a person's desire and motivation to work safely and securely, so this has a very strong influence on safety behavior. The results of research conducted by Neal dan Griffin (2006) also has similar results where individual safety motivation has a positive influence on safety participation as an indicator of safety behavior, but the results of research on this model do not show a relationship between safety motivation and compliance with procedures. In research conducted by Subramaniam et al (2023), shows that safety motivation is a variable that has a very strong influence on safety behavior. This is also reinforced by research conducted by Jung et al (2020) which shows that safety motivation is one of the factors that has a positive influence on safety behavior. Based on previous research references, safety motivation is very important for further research regarding its influence on safety behavior.

The influence related to working conditions on safety behavior can be seen from research conducted by Fernández-Muñiz et al (2017), where working conditions can be divided into 4 components, namely, work pressure, environmental conditions & occupational hazards, safety incentives, and co-worker support. The research model shows that working conditions is one of the factors that have a significant influence on safety behavior. In addition, research conducted by Nahrgang et al (2011) also shows the influence of the working condition variable on the safety behavior variable. In his research, Nahrgang et al (2011) defines working conditions as job demands and job resources, where job demands have the dimensions of risk and danger in work, while job resources have the dimensions of a supportive environment, adequate leadership, and a good safety climate. This is confirmed by research conducted by Jung et al (2020) which shows the influence of working conditions on safety behavior. With previous research references showing a significant relationship between working conditions and safety behavior, it is very important for working conditions to carry out further research regarding their influence on safety behavior.

This research aims to determine and analyze the influence of safety leadership, safety motivation, and working conditions on safety behavior at PT XYZ. This research is expected to provide the latest information regarding safety leadership, safety motivation, working conditions, and safety behavior in a company or organization. In this way, it is hoped that this research can also be used as a reference for similar research or material for further research. In addition, this research is also expected to provide guidance for leaders in the coal mining industry regarding the behavior and policies that must be taken to improve safety-related performance.

II. LITERATURE REVIEW

A. Organizational Behavior

Organizational behavior is a field of study that explores the influence that individuals, groups and structures have within an organization, with the aim of applying knowledge to provide positive changes to the effectiveness of the company (Robbins & Judge, 2017). Organizational behavior is said to be one of the existing fields of study, meaning that organizational behavior has unique expertise and is not the same as various existing collections of knowledge. Ross (2021) in his book provides a new perspective on organizational behavior as a field of study related to organizations which are collections of individuals who require cooperation and coordination of 2 or more people to achieve the goals targeted by the organization. The field of study related to organizations referred to here is organizational behavior, studying how an organization operates the human element within the organization and what methods are used by the organization to keep the workforce focused so that it can maintain the work effort of the workforce. In addition, organizational behavior implements the knowledge gained regarding individuals, groups, and the influence of structure on behavior with the aim of increasing organizational effectiveness.

B. Safety Leadership

Safety Leadership is a process that emphasizes safety-related interactions between leaders and subordinates, where a leader's ability to influence his subordinates is very important to achieve safety goals as desired by an organization (Wu et al, 2008). The interaction between the leader and his subordinates can take the form of motivation, the speed of the leader's response when there is a danger, as well as the leader's supervision process in routinely reminding subordinates to work safely in accordance with procedures. Safety Leadership can also be defined as the process of a leader influencing employees with the aim of creating a safe work environment within the company, guiding employees to be able to regulate their individual safety behavior, and helping employees to gain organizational support in achieving overall safety targets in companies (Zhao et al, 2021). According to research conducted by Basahel (2021), safety leadership is one of the factors that greatly influences safety behavior, where effective safety leadership with a strong management commitment to safety is a requirement for increasing safe behavior and will help to improve safety performance. Meanwhile, the results of previous research by Adi et al (2021) show that safety leadership has a significant positive impact on safety behavior. Then, the

results of previous research by Li et al (2020) also stated that safety leadership has a positive impact on safety behavior. Therefore, we propose the following hypothesis:

H1: Safety Leadership has a positive and significant impact on Safety Behavior of PT XYZ employees

C. Safety Motivation

Safety Motivation is a conscious desire that a person has to behave and act safely (Neal & Griffin, 2006). Meanwhile, Basahel (2021) defines safety motivation as a person's desire to comply with safety rules and regulations in the work area so as to create safe work behavior. Safe work behavior and individual satisfaction with the safety conditions of the work environment have a very strong influence on safety motivation, individual safety performance, and the level of work accident. Meanwhile, Lim et al (2018) define safety motivation by dividing safety motivation based on the causes of the motivation, namely amotivation, controlled motivation, and autonomous motivation. Lim et al (2018) tried to adopt research conducted by Ryan and Deci (2000) related to Self-Determination Theory which was then linked to safety motivation. Amotivation can be interpreted as a lack of motivation, where a worker does not have the motivation to work safely by violating safety rules or not following safety activities. Then, controlled safety motivation can be defined as a worker's motivation to work safely when under pressure to do so. Pressure to work safely can also come from within oneself, which is known as introjected safety motivation, that is, workers can feel guilty and embarrassed if they do not follow safety regulations. Meanwhile, autonomous safety motivation can be divided into identified safety motivation and intrinsic safety motivation. Identified safety motivation can be defined as the motivation that workers have to participate in safety activities because they believe working safely is important in the workplace. Then, intrinsic safety motivation can be interpreted as a person's desire to work safely for personal goals, namely pleasure and satisfaction. In research conducted by Subramaniam et al (2023), it shows that safety motivation is a variable that has a very strong influence on safety behavior. The results of research conducted by Neal and Griffin (2006) also had the same results where individual safety motivation had a positive influence on safety participation as an indicator of safety behavior. Research conducted by Peker et al (2022) also found that safety motivation has a very significant positive influence on safety compliance and safety participation as dimensions of safety behavior. Therefore, we propose the following hypothesis:

H2: Safety Motivation has a positive and significant impact on Safety Behavior of PT XYZ employees

D. Working Condition

Working conditions can be categorized as job demands and job resources in the context of work safety environment (Nahrgang et al, 2011). Job demands can be interpreted as the dangers and risks contained in the workplace area, physical requirements, and the complexity of a job. Meanwhile, job resources include social, psychological and organizational aspects that help employees face work and achieve work goals. In previous research by Fernández-Muñiz et al (2017), working conditions can be divided into 4 components, namely, work pressure, environment conditions & occupational hazards, safety incentives, and co-worker support. Meanwhile, Fabiano et al (2022) define working conditions as the condition of the working environment which is assessed through physical indicators and appropriate situations, such as exposure to the working environment and the ergonomic level of the working environment which needs to be measured regularly with the aim of reducing the risk of injury to workers and environmental damage so that can increase productivity, job satisfaction and safety at work. The results of research conducted by Fernández-Muñiz et al (2017) show that safety participation as a variable of safety behavior is greatly influenced by environmental conditions & occupational hazards, safety incentives, and co-worker support which are variables of working conditions. In this way, a safe work environment, appreciation for workers who put in extra effort towards safety, and support from fellow colleagues in maintaining safety factors in the organization will increase worker involvement in safety activities. Meanwhile, research conducted by Nahrgang et al (2011) also shows the positive influence that working conditions have on safety behavior. Therefore, we propose the following hypothesis:

H3: Working Condition has a positive and significant impact on Safety Behavior of PT XYZ employees

E. Safety Behavior

Safety behavior is related to safety carried out by every worker in an organization (He et al, 2019). Safety behavior is the main key to safety performance which has helped reduce many risk factors, such as injury and death. Meanwhile, Adi et al (2021) in their research define safety behavior as activities based on safe behavior in the work environment carried out by each worker to build and increase the level of safety in the workplace. Safety behavior tends to have data that is normally distributed, making it easier to interpret the data which can be used as material for safety evaluation and as material for carrying out interventions. Meanwhile, Dodoo et al (2021)

define safety behavior as the main factor in preventing behavior-based incidents which is very important in industries that have a high level of occupational risk.

Based on the hypothesis developed, we can construct a conceptual model that will be used in this research, as presented in **Fig. 2**.

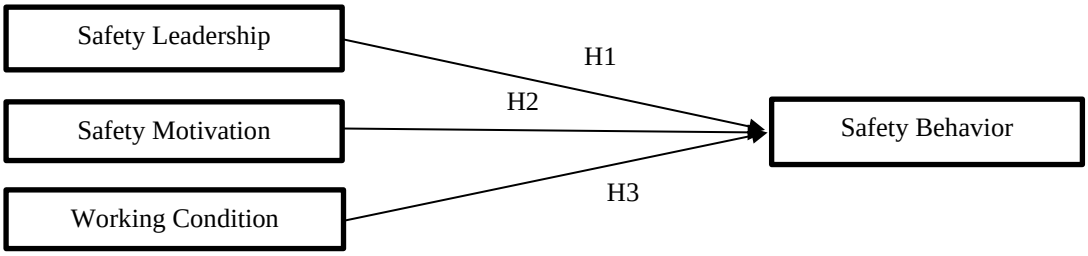

Fig. 2. Conceptual Model

III. RESEARCH METHODOLOGY

This research uses a quantitative method approach. This research will focus on operators who work in the production department because 18 of the total work accidents in PT XYZ occurs to operators in production department, which amounts to almost 80% of work accidents that occurred at PT XYZ occurred in the production department. In addition to that, researchers also determined population characteristics, namely employees who have worked for at least 1 year, so it is hoped that these population characteristics will make the data more valid because they take a population that has adapted to the work environment of PT XYZ. This research uses an accuracy level (α) of 5%, an error tolerance of 5% and a confidence level of 95%, so that from a total of 651 employees in the PT XYZ production department, the minimum number of samples required is 248 samples. In total, there were 262 questionnaire results that were collected during the 1 month that the questionnaire was distributed. There are two types of data sources used in this research, namely primary data used in this research through interviews and questionnaires distributed in the form of statements, and secondary data used through data on the number of work accidents and data on the causes of work accidents. This research used a Likert scale type, which is divided into scales with numbers 1-5.

After getting the results of the questionnaire, the next research method is through a validity and reliability testing process. The validity test is a measurement test used to determine to what extent a proposed questionnaire can be used to extract information from respondents accurately (Paramita et al, 2021). Validity testing is carried out to test the validity of all research indicators so that in the next process only indicators whose values are in accordance with the standards will be used. Meanwhile, reliability testing is a measuring tool to determine the extent to which a questionnaire used in research is able to produce results that are not different, if it is repeated on the same object at different times (Paramita et al, 2021). By using this validity and reliability test, it is hoped that the research results will be valid and reliable. The research model will then be tested using a structured equation model (SEM) using LISREL 8.8 software.

This research uses the concept of safety leadership owned by Fernández-Muñiz et al (2017) by measuring the extent to which leaders can consistently remind and create safety behavior among their subordinates. Safety Leadership's concept owned by Fernández-Muñiz et al (2017) measuring safety leadership using two dimensions, namely inspirational appeals and participative management. Inspirational appeals will use 10 indicators to measure actions taken by leaders with the aim of motivating employees to be involved in safety-based activities. Meanwhile, participative management uses 8 indicators that will measure how a leader is involved in health and safety activities.

Regarding the safety motivation variable, this research adopts four dimensions of safety motivation from previous research by Lim et al (2018), namely external safety motivation, injected safety motivation, identified safety motivation, and intrinsic safety motivation. The external safety motivation dimension has 3 indicators that are used to assess the presence of stimulation to create a behavior. This stimulus can be in the form of a reward for working safely or a consequence for not working safely. The introjected safety motivation dimension has 3 indicators that are used to assess the pressure that makes a worker behave safely, but this pressure comes from other workers who are on the same team. The identified safety motivation dimension has 3 indicators that are used to assess workers who have the motivation to work safely because they believe that a safe working environment is very important and working safely is necessary to achieve this goal. The intrinsic safety motivation dimension

has 3 indicators that are used to assess workers who work safely and feel that working according to procedures is enjoyable.

This research also adopts the concept of working conditions owned by Fernández-Muñiz et al (2017) which is divided into 4 research dimensions, namely, work pressure, environmental conditions & occupational hazards, safety incentives, and co-worker support. The work pressure dimension has 4 research indicators which are used to measure work pressure for workers in the work environment. The environmental conditions & occupational hazards dimension has 6 indicators that are used to measure dangerous and unsafe conditions in the workplace. The safety incentives dimension has 5 indicators which are used to measure rewards and sanctions given by management to workers when working safely or when working unsafely. The co-worker support dimension has 5 indicators which are used to measure how far is communication between all of the workers to remind each other related to safety.

The safety behavior model in this research is adopted from the concept of safety behavior carried out by Adi et al (2021) by having two dimensions to be measured, namely safety compliance and safety participation. The Safety Compliance dimension has 4 indicators which are used to measure the extent to which workers carry out work activities to maintain a safe work environment. Meanwhile, the safety participation dimension has 3 indicators which are used to measure the extent to which workers' perceptions of carrying out work activities can help to build a safe work environment.

Table 1. Operational Variables

Variable	Safety Leadership	Safety Motivation	Working Condition	Safety Behavior
Dimension	Inspirational Appeals	External Safety Motivation	Work Pressure	Safety Compliance
	Participative Management	Introjected Safety Motivation	Environmental Condition & Occupational Hazard	Safety Participation
		Identified Safety Motivation	Safety Incentives	
		Intrinsic Safety Motivation	Co-worker Support	

IV. RESULT/FINDING

A. Results

The respondents collected in this research were employees who worked as operators in the Production Department. This was due to the urgency that work accidents in the Production Department amounts to almost 80% of work accidents that occurred at PT XYZ. In this study, researchers were able to obtain 262 respondents who had various characteristics. Researchers obtained primary data in this study by distributing questionnaires directly to respondents. The response given by the respondent will be considered valid if the respondent answers all the questions in the questionnaire and only chooses one answer from the answer options available for each question. This questionnaire also includes questions about age, highest level of education, job title, and length of service to find out data about the characteristics of research respondents. The majority of respondents were in the 18 - 24 years age category, where in this category the number of respondents who filled out the questionnaire was 41% of the total respondents. Meanwhile, employees who filled out the questionnaire were dominated by respondents with a final education level of high school/vocational school graduates, amounting to 87% or the equivalent of 228 people. Based on job title, the majority of respondents in this study held positions as DT operators, amounting to 70% or 183 respondents. Data questionnaire was then transformed from ordinal to continuous variable type before proceeding to next process. This data was then processed using LISREL 8.8 software to carry out validity and reliability tests. Based on the operational variables discussed in the previous chapter, safety leadership variable consists of 2 dimensions and 18 indicators, safety motivation variable consists of 4 dimensions and 12 indicators, and working conditions variable consists of 4 dimensions and 20 indicators. This research model has 3 exogenous constructs, namely safety leadership, safety motivation, and working condition variables, while has 1 endogenous construct namely safety behavior. The following is a first order CFA model of all dimensions.

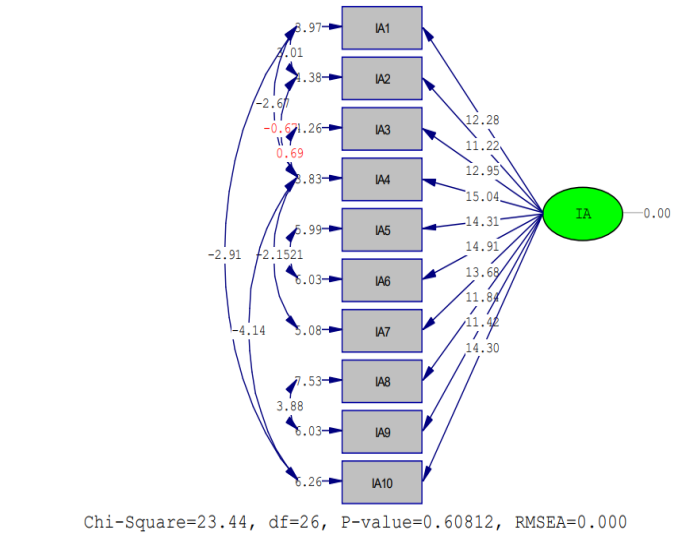

Fig. 3. T-Value Result of Inspirational Appeals Dimension

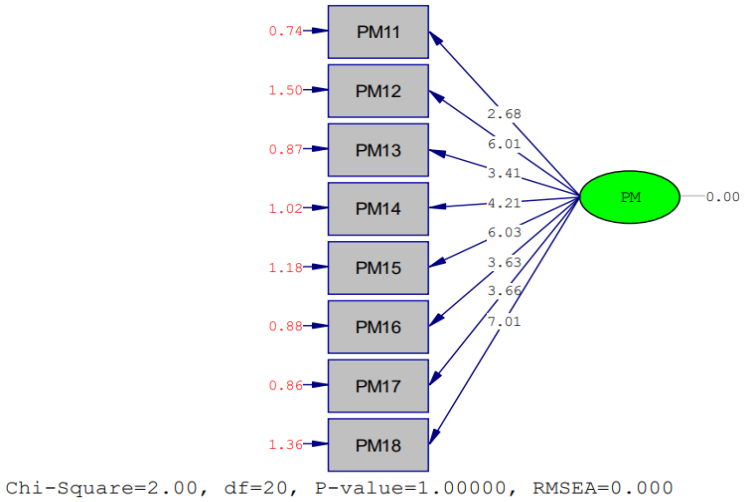

Fig. 4. T-Value Result of Participative Management Dimension

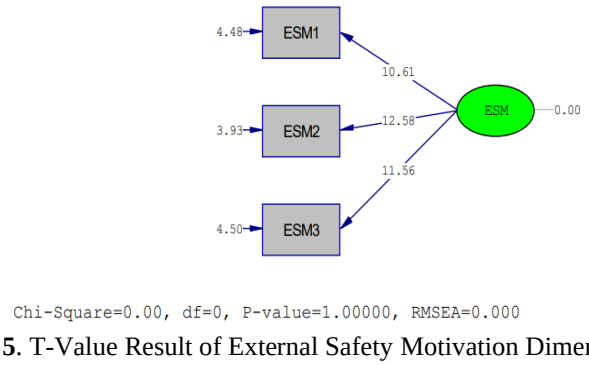

Fig. 5. T-Value Result of External Safety Motivation Dimension

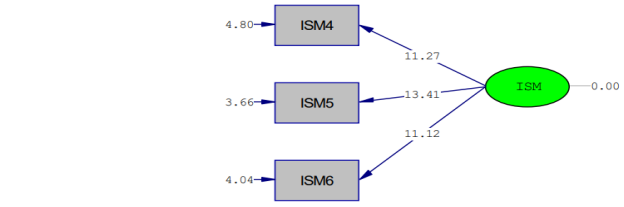

Fig. 6. T-Value Result of Introjected Safety Motivation Dimension

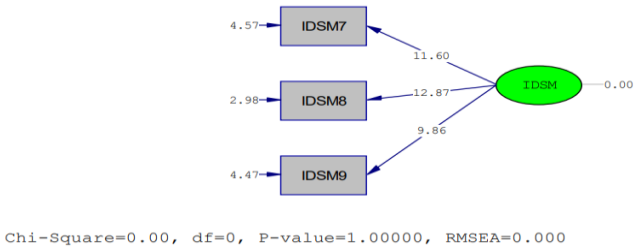

Fig. 7. T-Value Result of Identified Safety Motivation Dimension

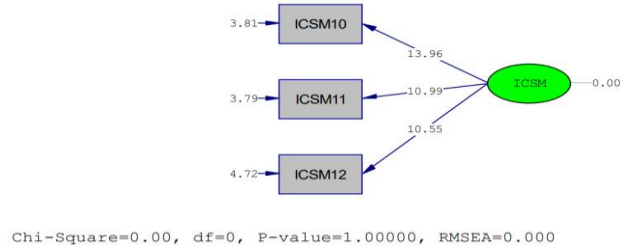

Fig. 8. T-Value Result of Intrinsic Safety Motivation Dimension

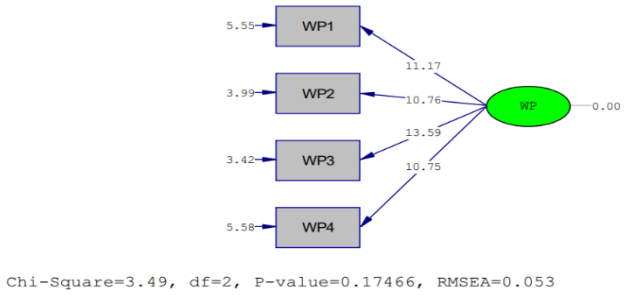

Fig. 9. T-Value Result of Work Pressure Dimension

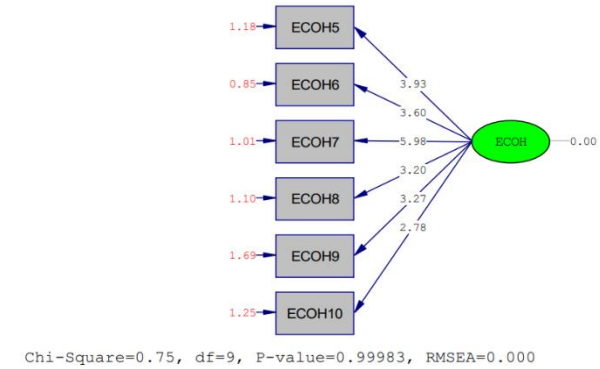

Fig. 10. T-Value Result of Environmental Condition & Occupational Hazards Dimension

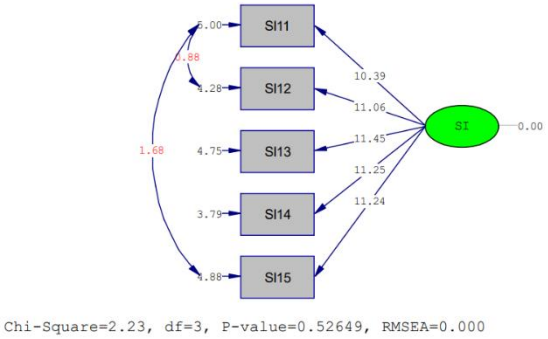

Fig. 11. T-Value Result of System Incentive Dimension

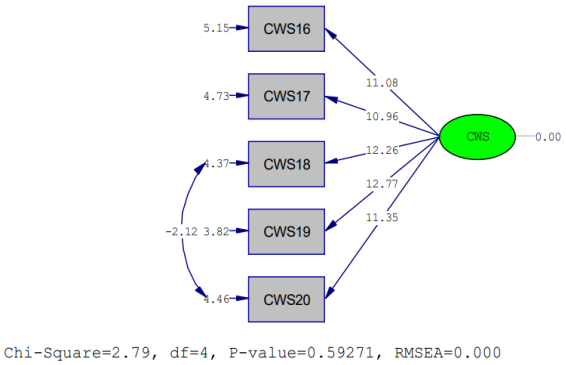

Fig. 12. T-Value Result of Co-worker Support Dimension

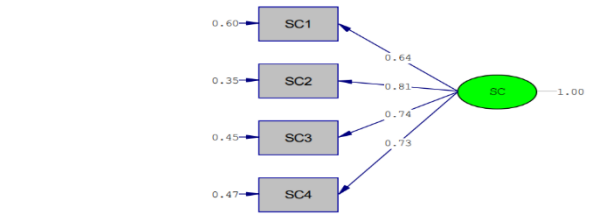

Fig. 13. T-Value Result of Safety Compliance Dimension

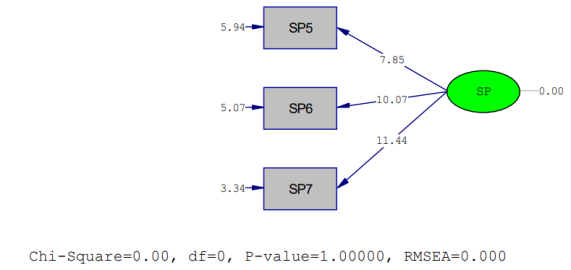

Fig. 14. T-Value Result of Safety Participation Dimension

The second order CFA modeling is carried out after obtaining the T-value for each dimension of the variable through the first order CFA. Next, by conducting the second order CFA modeling, the value of the construct variable will be obtained. Second order CFA cannot be measured directly, but is carried out by indirect measurement after obtaining the value for each dimension. The following is a second order CFA model on all variable.

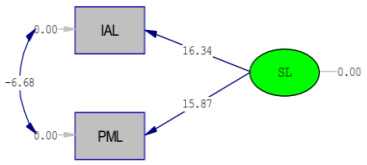

Fig. 15. T-Value Result of Safety Leadership Variable

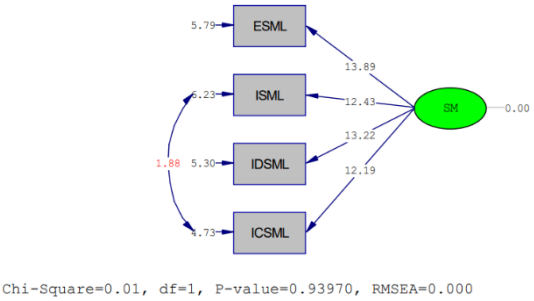

Fig. 16. T-Value Result of Safety Motivation Variable

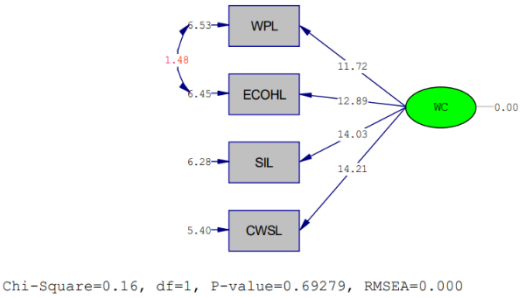

Fig. 17. T-Value Result of Working Condition Variable

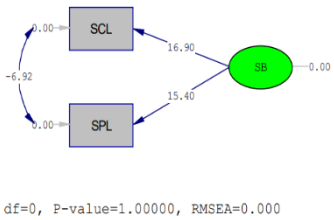

Fig. 18. T-Value Result of Safety Behavior Variable

Next, The SEM test uses all construct variables that have been declared valid and reliable in previous validity and reliability tests, and have gone through first order and second order CFA model tests. Based on **Fig. 19**, it can be seen that the calculated T-value of safety leadership on safety behavior is 2.92 > 1.96 so this indicates that safety leadership has a positive and significant impact on safety behavior. That way, the higher the safety leadership possessed by superiors directly to employees will make employees have good safety behavior well, and vice versa. The result also showed that the calculated T-value of safety motivation on safety behavior is 1.08 < 1.96 so this indicates that safety motivation does not have a significant influence on safety behavior. Meanwhile, based on **Fig. 19** it can also be seen that the calculated T-value of working conditions towards safety behavior is 5.07 > 1.96 so this indicates that working conditions have a positive and significant influence on safety behavior. That way, the higher the value of the working condition variable will make employees have better safety behavior, vice versa. This SEM analysis uses all construct variables that have been declared valid and reliable in validity tests and reliability test. All dimension has a SLF > 0.5, VE value > 0.5 and a CR value > 0.7, so all dimension categorized as valid and reliable. This SEM analysis also has passed through first order and second order CFA model tests.

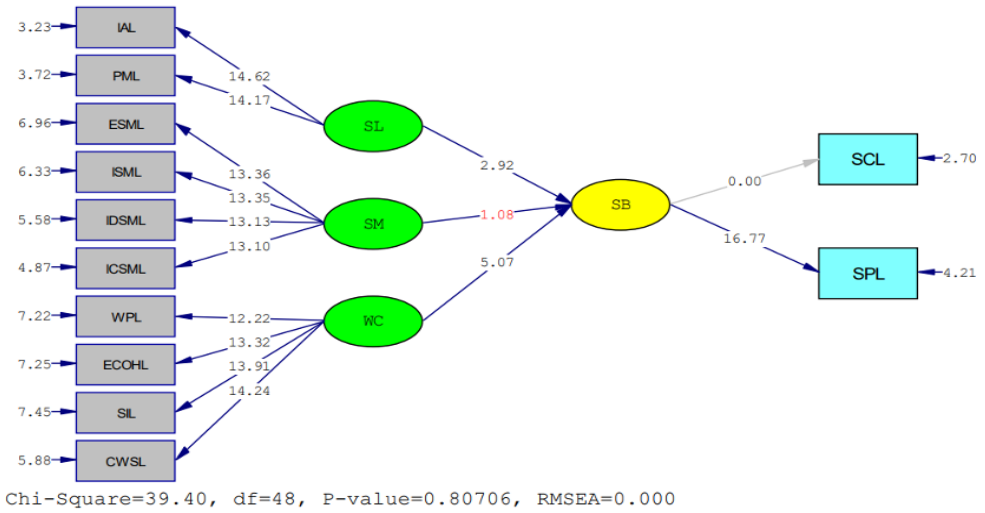

Fig. 19. T-Value Result of CFA Structural Model

The results of the structural equations that have been carried out must go through a suitability test model or often also called the Goodness of Fit Model in SEM analysis to know that the model that has been successfully built has a good fit against previously designed research models. Nurbaiti (2021) explains in her book that there are 8 indicators of a good model fit test and can represent data categories with good fit. Based on the results of data processing according to the Goodness of Fit model criteria in **Table 2**, it can be seen that the SEM model have 4 criteria that classified as perfect fit and 4 criteria that classified as good fit. So, the CFA structural model can be classified as good fit.

Table 2. Reliability Test for Exogenous and Endogenous Variables

GOFI Indicator	GOFI Standard	Results	Conclusion
RMSEA	≤ 0,08	0	Perfect Fit
NFI	≥ 0,90	0,99	Good Fit
NNFI	≥ 0,90	1	Perfect Fit
CFI	≥ 0,90	1	Perfect Fit
IFI	≥ 0,90	1	Perfect Fit
GFI	≥ 0,90	0,98	Good Fit
RFI	≥ 0,90	0,99	Good Fit
Std. RMR	≤ 0,05	0,015	Good Fit

V. DISCUSSION

Safety Leadership

Based on the research results and modeling of first order and second order CFA, it can be seen that the inspirational appeals dimension has a greater influence on safety leadership compared to the participative management dimension with a calculated T value of 16.34 compared to 15.87. The indicator of superiors encouraging employees to work safely (IA4) and the indicator of superiors encouraging employees to improve work skills (IA6) have the greatest influence on the value of the inspirational appeals dimension, which of course has the greatest indirect impact on the safety leadership variable.

Safety Motivation

Based on the results of the research and modeling of the first order and second order CFA, it can be seen that the external safety motivation dimension has a greater influence on safety motivation compared to other dimensions with a calculated T value of 13.89. The indicator of employees working safely because they get pressure from other parties (ESM2) has the greatest influence on the value of the external safety motivation dimension which of course has the greatest indirect impact on the safety motivation variable.

Working Condition

Based on the results of the research and modeling of the first order and second order CFA, it can be seen that the co-worker support dimension has a greater influence on working conditions compared to other dimensions with a T-value of 14.21. The employee indicator that employees often talk about the dangers in their workplace and how to control them (CWS19) has the greatest influence on the value of the co-worker support dimension which of course has the greatest indirect impact on the working condition variable.

Influence of Safety Leadership, Safety Motivation, and Working Condition on Safety Behavior

Safety Leadership has a positive and significant influence on Safety Behavior. This can be seen from safety leadership which has a t-value of 2.92 > 1.96 so this indicates that safety leadership has a positive and significant influence on safety behavior. Thus, the higher the safety leadership possessed by the employee's direct superior, the employee will have good safety behavior, and vice versa. The results of this study are in accordance with previous studies by Wu et al (2023) and Aktas and Kagnicioglu (2023) which showed the results of a positive and significant influence given by safety leadership on safety behavior. In addition, the results of this study are also further strengthened by previous studies conducted by Adi et al (2021) and Li et al (2020) which also showed a positive and significant influence of safety leadership on safety behavior.

Meanwhile, the t-value of the influence of safety motivation on safety behavior is 1.08 <1.96, so this indicates that safety motivation does not have a significant influence on safety behavior. The high and low safety motivation possessed by employees does not have a significant impact on the safety behavior of PT. XYZ employees. The results of this study are not in line with the results of research conducted by Neal & Griffin (2006) which showed a positive and significant influence given by safety motivation on safety behavior. The results of this study also do not match previous research by Lim et al (2018) which showed a positive and significant influence of safety motivation on employee safety behavior. However, the results of this study have the same results as research conducted by Maneechaeye and Potipiroon (2022) which showed that safety motivation does not have significant influence on the safety behavior variable.

Then, in the results of the third variable study, the working condition variable has a t-value on safety behavior of 5.07> 1.96, so this indicates that working conditions have a positive and significant influence on safety behavior. Even in terms of the T-value, the working condition variable is the variable that has the most significant influence on safety behavior because it has the largest T-value compared to the other 2 variables. That way, the higher the value of the working condition variable, the better the employee's safety behavior will be, and vice versa. Based on the dimensions measured in this study, PT XYZ can pay better attention to the dimensions of work pressure, environmental conditions & occupational hazards, safety incentives, and co-worker support because they have been proven to have a very significant influence on safety behavior. The results of this study are in accordance with previous research by Fernández-Muñiz et al (2017) which states that working conditions have a positive and significant influence on safety behavior.

VI. CONCLUSION AND RECOMMENDATION

This research shows the results that safety leadership and working conditions at PT. XYZ have a positive and significant influence on safety behavior, while safety motivation does not have a significant influence on safety behavior. Overall, the research indicators for each variable of safety leadership, safety motivation, and working condition are also included in the good category through descriptive analysis. PT. XYZ needs to focus on safety leadership and working condition in order to increase safety behavior since these 2 variables have a positive and significant impact on safety behavior.

First, as an effort to increase safety leadership at PT. XYZ, it is necessary to focus on the dimension that have a large influence on increasing the value of safety leadership. The dimension that has the most influence on the safety leadership variable is the inspirational appeals dimension, which has 2 indicators that has the most significant influence on this dimension, namely the indicator of motivating employees to work safely and the indicator of encouraging employees to improve work skills. Meanwhile, as an effort to increase working condition, PT. XYZ also need to focus on the dimension that have a large influence on increasing the value of working condition variable. The dimension that has the most influence on the working condition variable is the co-worker support dimension, with the indicator that employees often talk about the dangers in their workplace and how to control them as the main indicator to co-worker support dimension.

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