Safe behavior based on safety leadership factors and leadership style

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Abstract

Background: Statistical data on work accidents in West Java based on data from the Employment Social Security Administrative Agency in 2020, there were 35,291 work accident cases. However, companies in Indonesia, specifically in Bandung, West Java, namely PT. X Indonesia, based on data from 2018 to 2021, there will be no work accidents resulting in loss of working days or working hours. The purpose of this study was to determine the relationship between safety leadership and leadership style with safe behavior.

Material and methods: This type of research is analytically observational, with a quantitative approach, and a cross-sectional design. The population of this research is production workers. The sampling technique used a total sampling technique with a sample of 44 people. The data analysis used is chi-square.

Result: The results showed that the variables related to safe behavior were educational level (p-value = 0.008), safety concern (p-value = 0.000), and directive leadership style (p-value = 0.041). Variables that are not related are age, gender, years of service, safety motivation, and leadership style (participatory, achievement-oriented, and supportive).

Conclusion: There is a relationship between education level, safety concern, and directive leadership style with workers' safe behavior.

Keywords: Safe Behavior; Safety Leadership; Leadership Style; Safety Concern

1. Introduction

Occupational Health and Safety (OHS) is an aspect of labor protection that aims to be able to carry out work in a comfortable, healthy, and safe manner, to achieve an optimal increase in work productivity[1]. Recently OHS has not become the focus of national development, this is indicated by the high number of accidents and occupational diseases. According to the latest estimates by the International Labor Organization (ILO) in 2018, more than 1.8 million work-related deaths occur annually in the Asia and Pacific region. Two-thirds of work-related deaths in the world occur in Asia. 2.78 million workers die every year due to work accidents and work-related diseases[2]. About 2.4 million (86.3 percent) of these deaths were due to work-related diseases, while more than 380.00 (13.7 percent) were due to work accidents [3].

In Indonesia, based on data from Employment BPJS, there are an average of 130,000 work accident cases every year. In 2017 the number of work accidents totaled 123,041 cases and increased in 2018 to 173,105 cases with compensation of up to IDR 1.2 trillion. The increase in cases in 2018 was 50,064 cases or as much as 28.92% compared to 2017. In 2019, the number of work accidents decreased by 114,000 cases compared to 2018[4]. In 2020, until October the number of work accidents in Indonesia reached 129,305 cases, including 4,275 cases of disability, 9 cases of total disability, and 2002 deaths.
Statistical data on work accidents in West Java based on data from the Employment BPJS in 2019 there were 22,988 cases. Among them, 20,592 cases of work accidents, 2,099 cases while unable to work, 111 cases of disability, 186 cases of death, and as many as 35,291 cases that occurred throughout 2020. Of these, 26,699 cases of work accidents, 7,391 cases while unable to work, 930 cases of disability and 271 cases of death [5]. West Java Province is included in the top 3 highest work accident data sequences in Indonesia throughout 2020[6]. According to Heinrich in Hadikusumo, 88% of accidents are caused by unsafe acts or actions from humans (unsafe acts) while the rest are caused by things that are not related to human error, namely 10% are caused by unsafe conditions (unsafe conditions) and 2% caused by the unavoidable[7].

Behavior is a direct factor causing work accidents, data shows 88% of accidents are due to unsafe actions or actions, so one of the concepts that is often put forward is related to safe behavior. These safe behaviors in the workplace include training, K3 month activities, knowledge, perceptions, motivation, safety regulations, the role of supervisor, and the role of colleagues with safe behavior. The general concept used to analyze workers’ safe behavior is the concept of behavior based on ABC (Antecedents, Behavior, and Consequences)[8,9]. Safe behavior can be influenced by age, gender, years of service, level of education, safety motivation, safety concern, and leadership style.

Occupational safety and health leadership have a role in achieving the goal of building a safety culture in work to improve performance, safety leaders automatically become part of the factors that influence the success of Occupational Health and Safety performance[10]. One of the factors in implementing the implementation of occupational safety and health is safety leadership through a motivational approach and directives from leaders to workers, thereby increasing individual and company safety performance.[11]. Leaders usually use certain leadership styles to influence the performance of their subordinates. Leadership style is a step or way that is usually done by a leader as the basis for forming habits to influence his subordinates to achieve goals. According to Robert House, as quoted by Robbins revealed that there are four types of Path Goal leadership classifications, namely directive leadership style, supportive leadership style, participative leadership style, task-oriented leadership style. Various leadership styles are used by a leader to influence and motivate his subordinates, to improve the performance of his subordinates in doing the job.

Previous research has shown that the leadership style of safety participation and delegating has a positive influence on employee safety behavior. Likewise, motivation to behave safely is a driving factor for safe behavior. Based on this background, this study aims to analyze the safety behavior of workers based on safety leadership factors and leadership style.

2. Material and methods
This type of research is analytic observational with a quantitative approach and cross-sectional design. The dependent variable in this study is safety behavior, with the independent variable’s safety motivation, safety concern, directive leadership style, supportive leadership style, participative leadership style, and achievement-oriented leadership style. The population in this study is the person in charge of OHS and all production workers at PT X in Indonesia as many as 44 people, the sampling technique used is total sampling. Data collection was carried out using interviews, questionnaires, and direct observation of workers and research sites to obtain supporting information according to the research objectives. Univariate data analysis using the frequency distribution of research variables, bivariate data analysis using the chi-square test, and risk estimate analysis.

3. Results
In this study, data was collected by distributing questionnaires, while interviews and observations were carried out to obtain additional information. The research results are as follows:

Based on table 1, shows that most workers are <35 years old with a percentage of 72.7%, almost all workers are male with a percentage of 93.2%, most of the workers are highly educated with a percentage of 63.6%, and most workers work with ≤5 years of service with a percentage of 54.5%. Most of the workers have high work motivation with a percentage of 59.1%, half of the workers think that superiors focus on high safety a percentage of 50%, most workers choose a directive leadership style with a percentage of 59.1%, then most workers choose supportive leadership style with a percentage of 52.3%, then most workers choose a participatory leadership style with a percentage of 56.8%, and most workers choose an achievement-oriented leadership style with a percentage of 52.3%. Then, most of the workers behaved less safely with a percentage of 45.5% and most of the workers behaved safely with a percentage of 54.5%.
Table 1 Distribution of Research Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>&lt;35 Years</td>
<td>32</td>
<td>72.7</td>
</tr>
<tr>
<td></td>
<td>≥35 Years</td>
<td>12</td>
<td>27.3</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>41</td>
<td>93.2</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3</td>
<td>6.8</td>
</tr>
<tr>
<td>Level of Education</td>
<td>Low</td>
<td>16</td>
<td>36.4</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>28</td>
<td>63.6</td>
</tr>
<tr>
<td>Years of Service</td>
<td>&gt;5 Years</td>
<td>20</td>
<td>45.5</td>
</tr>
<tr>
<td></td>
<td>≤5 Years</td>
<td>24</td>
<td>54.5</td>
</tr>
<tr>
<td>Safety Motivation</td>
<td>Low</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>26</td>
<td>59.1</td>
</tr>
<tr>
<td>Safety Concern</td>
<td>Low</td>
<td>22</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>22</td>
<td>50</td>
</tr>
<tr>
<td>Directive</td>
<td>Low</td>
<td>18</td>
<td>40.9</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>26</td>
<td>59.1</td>
</tr>
<tr>
<td>Supportive</td>
<td>Low</td>
<td>21</td>
<td>47.7</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>23</td>
<td>52.3</td>
</tr>
<tr>
<td>Participatory</td>
<td>Low</td>
<td>19</td>
<td>43.2</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>25</td>
<td>56.8</td>
</tr>
<tr>
<td>Achievement Orientation</td>
<td>Low</td>
<td>21</td>
<td>47.7</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>23</td>
<td>52.3</td>
</tr>
<tr>
<td>Safe Behavior</td>
<td>Safe</td>
<td>20</td>
<td>45.5</td>
</tr>
<tr>
<td></td>
<td>Unsafe</td>
<td>24</td>
<td>54.5</td>
</tr>
</tbody>
</table>

Table 2 shows most workers aged <35 years with a good category of 53.1%. The chi-square results show that the p-value is 1,000, which means p ≥0.05, so there is no relationship between age and worker safety behavior. Then most workers are men with a good category of 51.2%, the chi-square results show that the p-value is 0.300, which means p ≥0.05, so there is no relationship between gender and safe behavior. It is also known that most workers have low education in the less category, namely as much as 75%, the chi-square results show that the p-value is 0.008, which means p <0.05, so there is a relationship between education level and worker safety behavior, the value POR (95% CI) = 7,500 (1,854 – 30,335) which means that the chance for workers with low education to behave unsafely compared to workers with higher education is 7,500.

Half of the workers who have a good category are workers who have long working hours, namely as much as 50%, a p-value of 0.804, where there is no relationship between tenure and worker safety behavior. Most workers have low safety motivation in the less category, namely 55.6%, p-value of 0.417, which means that there is no relationship between safety motivation and safe behavior. Most workers who focus on low safety are in the less category, namely as much as 67.9%, the p-value is 0.000, which means there is a relationship between safety concerns and safe behavior. POR value (95% CI) = 133,000 (12,726 – 1,390,002) means that workers who focus on low safety can behave unsafely compared to workers who focus on high safety, which is 133,000.

Table 2 Relationship between Employee Characteristics, Safety Leadership Factors, and Leadership Style with Safe Behavior
It can be seen that the majority of workers who rate their superiors have a low directive leadership style with a less category, namely 66.7%, p-values of 0.041, which means there is a relationship between directive leadership style and safe behavior POR value (95% CI) = 4,500 (1,244–16,283) meaning that workers who judge their superiors with a low directive leadership style have the opportunity to behave safely compared to a high directive leadership style which is 4,500. Most of the workers who rated their superiors had a low supportive leadership style with a lower category, namely 57.1%, a p-value of 0.236, which means that there is no relationship between a supportive leadership style and workers’ safe behavior. Most of the workers who rated their superiors had a low participatory leadership style with a lower category, namely 63.2%, a p-value of 0.080, which means that there is no relationship between a participatory leadership style and workers’ safe behavior.
lower category, namely 63.2%, a p-value of 0.080, which means that there is no relationship between participatory leadership style and safe behavior. Most of the workers who rated their superiors had a low achievement-oriented leadership style with a lower category, namely 52.4%, a p-value of 0.563 meaning that there was no relationship between the achievement-oriented leadership style and the safe behavior of workers.

4. Discussion

4.1. Relationship between Individual Characteristics and Workers’ Safe Behavior

Based on the results of the study showed that there was no relationship between age and safe behavior. The results of this study are in line with Halimah’s research that there is no relationship between age and worker safety behavior[12]. As we get older, safe behavior will be difficult to apply in everyday life because we feel experienced in this situation. Workers aged <35 years tend to comply more with the regulations made by the company, because this age is considered mature and stable, and <35 years of age is needed by companies, for example, those engaged in engineering because they need skilled workers. larger, so that many workers aged <35 years work in that field. Ages that are still in their productive period usually have a higher level of productivity than workers who are old so they are physically weak and limited. According to WHO, the age group that reaches the pre-envision stage will experience a decrease in body resistance and various psychological pressures, which can affect activities[13].

There is no relationship between gender and safe behavior, almost all workers are men, and a small number of workers are women. This result is in line with Mairing’s research which states that there is no statistically significant relationship between gender and OSH behavior[14]. Every individual, both male and female in the research location, did their best to comply with applicable regulations.

There is a relationship between education level and workers’ safe behavior, most of the workers have higher education. This result is not in line with Mairing’s research which says that there is a statistically significant relationship between education and OSH behavior[14]. Education is related to increasing general knowledge and understanding of our environment. Education is also referred to as an action taken by employees to master certain skills, knowledge, and attitudes that result in relatively permanent changes in their work behavior. With education a person can carry out social mobility, such as someone who comes from the lower class can move into the upper middle class because of the education he has taken so that he can get a decent job.

Based on the results of the study, showed that there was no relationship between the length of service and safe behavior, most workers had a new service period of ≤5 years. The working period also affects the level of productivity to be achieved. The longer the worker is engaged in his work, the more skilled and faster he will be in producing the product. Workers who have been working for a long time already know the situation at work, so they don’t behave safely. However, workers who have just started work because they do not know the work situation and are inexperienced, so they will be careful and behave safely. This is supported by Fitriyana who stated that even though tenure can influence a person’s experience, it does not mean that experience is the dominant factor in shaping occupational health and safety behavior[15]. The longer the working period of a worker, the skills and ability to do the job should increase. The experience of someone carrying out work continuously can increase their technical maturity. Several factors determine whether or not an employee is experienced and also serve as an indicator of work experience, namely length of time/age of work, level of knowledge and skills, and mastery of work and equipment[16].

4.2. Relationship between Safety Leadership Factor and Safe Behavior

Based on the results of the study, shows that there is no relationship between safety motivation and safe behavior. In this case, safety motivation does not play a role as it should because the safe behavior that is formed is a habit of workers who are carried out based on professionalism and company rules. So, this makes it clear that the safe behavior that is formed is the result of a rule and the obligation to behave safely in the company. This result is in line with Fitriani’s statement that there is a relationship between motivation to behave safely and safe behavior in workers[17]. In addition, according to Karyani’s research results, it was also found that there was a significant relationship between motivation and safe behavior at work, where highly motivated workers have three times the chance to behave safely compared to workers who have low motivation.

Motivation arises because of needs, namely deficiencies experienced by individuals at certain times which can be physical, psychological, or sociological. When there is a need, individuals are more easily motivated. Work motivation is a condition that moves a person to expend a high level of effort to achieve company goals and work motivation possessed by employees is one of the determining factors in the success of the goals set by the company and a condition
that encourages other people to be able to carry out task's tasks according to their function in the organization. In terms of measuring work motivation, it can be concluded that work motivation is a skill in directing controlling, and moving someone to take action on the desired behavior based on predetermined goals.[18].

In this study, there was no relationship between safety concerns and safe behavior, half of the workers rated supervisors who focused on low safety and half of the workers also rated supervisors who focused on high safety. These results are in line with Agustina’s research which explains that safety leadership has a significant and positive direct influence on employee safety performance[11]. This is in line with research by Fernandez-Muniz showing that safety leadership can provide an example of behavior for employees to work harder, be more efficient, and take responsibility to improve safety performance. There are examples of behavior, direction, and motivation from leaders who prioritize work safety will be followed by subordinates to display safety performance when doing work.

Safety concern is a concern to emphasize the importance of the use of work safety equipment and supervision of work safety standards. The creation of occupational health and safety in the workplace requires knowledge and awareness of the caring attitude of its workers towards occupational health and safety[19].

4.3. Relationship between Leadership Style and Safe Behavior

Based on the results of the study, shows that there is a relationship between directive leadership style and safe behavior. The superiors at PT. X Indonesia does have a more positive relationship or has a good relationship with subordinates. Superiors also often give special orders or assignments to their subordinates, but the superiors in the company always motivate their workers to work even harder and comply with the rules given by the company. This type is an authoritarian leadership practice, members or subordinates never have the opportunity to participate in expressing opinions, especially in making decisions like this style based on the use of force, power, and authority to provide specific instructions for the performance of their subordinates. This type of leader considers leadership to be his right and believes that he can determine anything in the organization, without consulting his subordinates who carry it out. The implementation is also very tense, so it is more appropriate if this type of leadership or leader is used for emergencies, where consultation with subordinates is no longer possible.

Based on the results of the study, it showed that there was no relationship between a supportive leadership style and safe behavior, most workers rated their superiors as having a low supportive leadership style and most workers rated their superiors as having a high supportive leadership style. Leaders with a supportive leadership style usually show a friendly attitude and concern for their subordinates, consider the needs of their subordinates, and show their concern for creating welfare and a friendly work environment. This includes increasing self-motivation and making work more interesting. This style is especially effective when facing difficult, stressful, tedious, or dangerous jobs. This behavior is especially necessary in situations where the physical or psychological task or relationship is not good. This type of leader supports a lot but does not provide direction because of low ability and high willingness to work. This means that the leader provides a lot of input or moral support but does not provide work instructions so that the tasks given can be completed quickly[20].

There is no relationship between participative leadership style and ama behavior. Participatory leadership style is a type of style that asks for and uses suggestions from subordinates in making decisions. Participatory leader behavior expects suggestions from subordinates in the decision-making process. In a participatory leadership style, ideas can flow from below (members) because the positions of control over solving a problem and making decisions are held alternately. Leaders provide space for subordinates to be able to participate in decisions as well as an atmosphere of friendship and mutual trust between leaders and members. This type of leadership will be very detrimental if the members are not mature enough to carry out their responsibilities and have high motivation toward work. On the contrary, it can be a boomerang for the company if it has employees who are the opposite of the previous statement[21].

There is no relationship between achievement orientation leadership style and safe behavior. The achievement-oriented leadership style is a leader who exposes members to challenging goals and encourages high performance while demonstrating confidence in the group’s abilities. According to House in Robbins achievement-oriented leadership, namely leadership that poses interesting challenges to subordinates and stimulates them to achieve goals and implement them properly. The higher the leader’s orientation to achievement, the more subordinates believe it will result in effective work execution. In the opinion of these figures in this style, setting goals that challenge and stimulate employees, expect employees to achieve as high as possible, believe in the ability of employees to achieve them, and continuously seek improvement in work or work[22].
5. Conclusion
The results showed that most workers were aged <35 years, almost all workers were male, most workers had higher education, and most workers had worked for ≤5 years. Most workers have high safety motivation and half of workers rate supervisors who focus on safety as high. Most workers assess superiors who have a good directive leadership style. Some workers behave safely in the workplace. On individual characteristics, there is a relationship between education level and safe behavior. The factor of safety leadership safety motivation is not related to the safe behavior of workers, while safety concern is related to the safe behavior of workers. There is a relationship between directive leadership style and worker safety behavior.

Compliance with ethical standards

Acknowledgment
Many parties were involved in this research, including the company leaders who have given research permission. We especially thank the workers. Furthermore, we hope that the results of this research can be used as material for consideration in ensuring the company's health and safety work is better.

Disclosure of Conflict of interest
The authors have no financial or other potential conflict of interest to disclose.

Statement of Informed Consent
All respondents had obtained research information, filled out informed consent, and agreed to participate. Researchers maintain research ethics and ensure the confidentiality of the pekerja's identity.

References


