

Increasing Productivity Through Strengthening Achievement Motivation and Effectiveness of Occupational Safety and Health Management



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ABSTRACT: This research aims to analyze the impact of occupational safety and health management and achievement motivation on employee productivity at PT. XYZ (Persero). This study employs a mixed-method approach, combining quantitative surveys and qualitative analysis. Data was collected from PT. XYZ (Persero) Transmission Implementation Units (UPT) in Bogor and Karawang over the period from 2017 to 2021. The results indicate that effective occupational safety and health management and achievement motivation have a significant positive impact on employee productivity. Both directly enhance productivity, although achievement motivation as a mediator is less effective than the direct influence of occupational safety and health management. The conclusion of this study is that improving the effectiveness of occupational safety and health management and achievement motivation can significantly boost employee productivity at PT. XYZ (Persero). Recommendations for the company include enhancing occupational safety and health training, monitoring the work environment, and developing reward programs for high-performing employees.

KEYWORDS: Employee Productivity, Occupational Safety and Health Management, Achievement Motivation.

1. INTRODUCTION

Human resources serve as the primary capital and the most valuable asset for attaining success and enhancing organizational efficiency. These resources possess the capability to manage and operate the organization to meet its objectives. The ability and willingness to manage and run an organization differ among individuals and are influenced by a variety of factors. Understanding the efforts made by human resources in managing and running an organization is crucial for human resource management to ensure that behaviors within the organization are directed. Goal-oriented behavior enables individuals to work productively. The primary responsibility of the PT. XYZ (Persero) Transmission Implementation Unit is to maintain power transmission installations in its operational area, covering maintenance of meters and protection, transmission installations, ScadaTel, operational supervision, logistics, environmental management, and electrical safety to meet performance targets, and manage administration and finance to support the operation and maintenance of installations. Each year, PT XYZ (Persero) sets work targets based on various indicators, including customer perspective, key performance, financial performance, human resources, and leadership perspective.

Productivity data from PT. XYZ (Persero) Transmission Implementation Unit in Bogor and Karawang between 2017 and 2021 reveal the distribution of employee numbers, MVA Transformer capacity, and annually measured productivity levels. In 2017, UPT Bogor employed 154 staff with a total MVA Transformer capacity of 3773 and productivity of 24,500. Adjustments in employee numbers and MVA Transformers over the subsequent years led to fluctuations in productivity levels. For example, despite a decrease in employees to 148 in 2018, productivity rose to 27,115, a 10.67% increase. By 2021, productivity had further increased to 28,601. In contrast, UPT Karawang exhibited a different pattern. With 284 employees and productivity at 18,237 in 2017, the following years saw changes affecting productivity. Although productivity dropped by 0.35% in 2018, it increased by 5.26% in 2020. However, 2021 saw a decline to 18,698, a 4.36% decrease. This data indicates fluctuating productivity at both PT. XYZ (Persero) Transmission Implementation Units in Bogor and Karawang.

Interviews about productivity at the Bogor and Karawang Transmission Implementation Units highlighted several concerns. At UPT Bogor, customer service was imperfect, with a recent flicker incident in 3 KTT UPT Bogor due to transmission system disturbances. While 93% of work met targets, the rest fell short due to third parties' lack of commitment to complete the set targets. Employees struggled to manage work programs involving many participants, making monitoring and evaluating progress challenging. Responsiveness to consumer complaints related to meter and electrical protection system damage was inadequate, as indicated by numerous online complaints. The implementation of layered security systems and automatic power diversion during disturbances and natural disasters like floods was also suboptimal.

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Preliminary survey results revealed productivity issues among employees at PT. XYZ (Persero) Central Java Transmission Implementation Unit (Western Region). These issues suggest that employees were less effective in utilizing available work inputs such as costs, labor, materials, equipment, and company support. Consequently, the output produced was suboptimal in terms of quantity, quality, facility utilization, performed activities, and the amount of output per employee. The management of occupational safety and health at PT. XYZ (Persero) Central Java Transmission Implementation Unit, particularly at the Bogor unit, did not meet work targets. The implementation of occupational safety and health reached 96% in 2015, 88.63% in 2016, and 51% for risk management studies in 2017, while in 2018 and 2019, the system met its targets. The occupational safety and health management process includes planning, implementation, evaluation, and action. However, at the Bogor unit, the focus was mainly on planning and implementing, with evaluation and action aspects not fully carried out.

A comprehensive evaluation of occupational safety and health management at PT. XYZ (Persero) Bogor was lacking. This includes assessing employee compliance, understanding compliance status, evaluating actions to eliminate non-conformance causes, reviewing non-conformities, and determining their causes to prevent recurrence. Additionally, actions to improve evaluation results were not implemented, such as necessary corrective actions, assessing effectiveness, and making changes to the integrated management system. Corrective actions should be prioritized based on the impact of non-conformance, including quality, health and safety, environment, and safety impacts. Employee productivity is also influenced by achievement motivation, which is driven by the attainment of success and aspirations in life. The goals set by employees can influence their job performance. Employees with high achievement motivation are more realistic, setting challenging yet achievable goals, whereas those with low motivation set goals that are either too easy or nearly impossible. High achievement motivation leads employees to set ambitious goals and persistently work towards them.

Based on a literature review, several studies have reported similar findings that achievement motivation significantly influences employee productivity (Budiwati & Shinuranti, 2019; Laksmiari, 2019; Purwaningsih et al., 2021). Research on the effectiveness of occupational safety and health management on employee productivity has been reported by (Has & Susanty, 2016; Santiana et al., 2018), with findings indicating that the effectiveness of occupational safety and health management significantly affects employee productivity. Recent research on work productivity has been reported by (Jaafar & Rahim, 2022), who investigated the mediating effects of job autonomy and work-family conflict on the relationship between telecommuting and employee productivity, and by (Kurdy et al., 2023), who studied the mediating effects of job level on the relationship between remote work and employee productivity.

2. LITERATUR REVIEW

2.1. Productivity

Sutrisno (2017) states that productivity is the relationship between output (goods or services) and inputs (labor, materials, money). Employee productivity consists of (a) the output dimension, which includes goods or services per unit and management effectiveness, and (b) the input dimension, which includes (1) labor, (2) consumable materials, (3) costs, (4) non-consumable equipment, and (5) time used to produce goods and services. According to (Sedarmayanti, 2011), productivity is the comparison between the results achieved (output) and the total resources used (input), related to productive attitudes and mentality such as motivation, discipline, creativity, innovation, dynamism, professionalism, and financial mindset. Mathis & Jackson (2012) define productivity as the measurement of the quantity and quality of work completed, considering the cost of resources used. Phusavat (2013) states that productivity is the quantitative ratio of output produced to input consumed. Samuelson & Nordhaus (2009) describe productivity as output per unit input, while (Robbins & Timothy, 2012) state that productivity is the transformation of inputs into outputs at the lowest cost. Based on these theories, employee productivity can be synthesized as the ratio between output (goods or services) and the various resources used (input). The dimensions of employee productivity include (a) the output dimension, consisting of (1) the effectiveness of work results, (2) the added value generated, (3) quality of work, and (4) quantity produced; and (b) the input dimension, consisting of (1) labor, (2) costs, (3) materials and equipment, and (4) organizational factors such as management support and programs that support product outcomes.

2.2. Effectiveness of Occupational Safety and Health Management

The Safety Association for Canada's (2018) states that occupational safety and health management aims to minimize injury and illness risks. This management involves management commitment, hazard identification, hazard control, PPE training, emergency response, incident reporting, and effective communication. Ardana et al. (2012) describe occupational safety and health management as protective measures to ensure safety and health in the workplace, facilitating safe and efficient use of production resources. Key factors include technical inspections, supervision, audits, risk acceptance, training, guidance, practice, and performance assessment. Mathis & Jackson (2012) emphasize ensuring safe working conditions through training, direction, and control of tasks, with daily monitoring, safety training, accident identification, workplace security, and communication as critical components. (Darmiatun & Tasrial., 2015) view occupational safety and health management as part of overall company management, aimed at risk control to create a safe, efficient, and productive workplace. Essential factors are policy establishment, planning, implementation, performance

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monitoring, and review. (Reese, 2018) defines it as an administrative function integral to safety initiatives, involving time and cost management for safety meetings, audits, and hazard control. (Hughes & Ferrett, 2011) see it as part of good management, involving planning, acting, checking, and evaluating to maintain health and safety standards, with a positive safety culture, stakeholder involvement, effective audits, and continuous improvement. In summary, occupational safety and health management is essential for protecting workers, ensuring they remain safe and healthy to work efficiently. Its dimensions include management commitment, communication, monitoring, training, and implementation of safety measures.

2.3. Achievement motivation

Dailey et al. (1990) states that achievement motivation is the drive to reach goals according to standards. It includes dimensions such as taking moderate risks, needing direct feedback, finding intrinsic value in tasks, defining work in terms of success rather than failure, and staying focused on tasks. (Robbins & Timothy, 2012) describe achievement motivation as the drive to excel and achieve success, focusing on goals, responsibility, feedback, satisfaction, and risk-taking. (Spence & Helmreich, 1983) emphasize the internal psychological drive to pursue valuable work and achieve standards, with indicators like enjoying challenging tasks, being proactive, and having a desire to win. (Royle & Hall, 2012) defines achievement motivation as the need to excel according to set standards, including risk-taking, seeking feedback, and taking responsibility. (Chika & Emmanuel, 2014) describe it as the drive to meet high standards and succeed in competitive situations. (Ivancevich & Konopaske, 2013) define it as the drive to surpass, work hard, and use skills to achieve goals, with indicators of personal responsibility and goal attainment. (Siagian, 2012) notes that achievement motivation drives individuals to contribute maximally and achieve organizational success. (Elliot et al., 2017) and (McPheat, 2013) highlight the struggle for success, perseverance, and feedback-seeking as key factors. (Susanto, 2018) adds that achievement motivation involves striving for success using all available potential and support. In summary, achievement motivation is the internal drive to excel, work hard, and use one's abilities to achieve set goals. Its dimensions and indicators include personal responsibility, setting work targets, working creatively, striving for goals, anticipating challenges, and performing tasks diligently.

2.4. Research Hypothesis

One aspect of the effectiveness of occupational safety and health management is organizing safety and health training, monitoring, and controlling the work environment, as well as overseeing safety and health measures. The safety training provided by the company aims to train employees to avoid workplace accidents and protect themselves in the event of an accident. Safety and health training makes employees more skilled and cautious in their work, allowing them to perform tasks smoothly and complete them on time according to the scheduled deadlines. Additionally, monitoring and identifying safety and health risks create a safe, comfortable, and adequate work environment that supports employee performance and fosters a pleasant work atmosphere. This encourages employees to work more diligently, produce quality work, and complete tasks on time. In other words, the effectiveness of the occupational safety and health management conducted by the company can increase employees' knowledge and awareness of safety and health, creating a conducive work environment that supports employees in working better. Thus, it is hypothesized that there is a significant positive effect of occupational safety and health management effectiveness on employee productivity.

Motivation drives the actions taken by employees. Achievement motivation is manifested in efforts and actions through various effective measures, influencing the optimization of an individual's potential. Someone with high achievement motivation has good management skills, can complete tasks already started, has a good work orientation, is proactive in their work, and loves what they do. Achievement motivation in employees will generate ideas, desires, and efforts to perform activities effectively and efficiently, utilizing company resources such as costs, materials, and equipment effectively to produce work results that meet the set standards in quantity and quality. This means that employees with achievement motivation can use resources effectively to produce optimal work results. Therefore, it is hypothesized that there is a significant positive effect of achievement motivation on employee productivity.

Based on the described framework, the hypotheses that can be derived from this research are:

H1: There is a direct positive effect of Occupational Safety and Health Management Effectiveness on Productivity.

H2: There is a direct positive effect of Achievement Motivation on Productivity.

H3: There is an indirect positive effect of Occupational Safety and Health Management on Productivity through Achievement Motivation.

3. METHODS

This research was conducted at the Central Java Parent Unit, consisting of 8 units, and in the Western Java working area, which includes 4 Transmission Implementation Units (UPT) of PT XYZ (Persero): UPT Bogor, UPT Bandung, UPT Karawang, and UPT Bekasi. The study employed a mixed-method explanatory-exploratory sequential design, starting with quantitative research to test hypotheses and followed by qualitative analysis to explore strategies. The quantitative phase involved a survey method and path analysis techniques using questionnaire instruments to test the hypothesis on the relationship between the effectiveness of occupational safety and health management and employee productivity and innovation through achievement motivation. In the

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qualitative phase, exploratory research was conducted to explain the challenges and strategies in enhancing productivity and innovation, comparing quantitative and qualitative data to draw comprehensive conclusions. The study design includes quantitative research using survey methods and qualitative analysis, hypothesis testing through quantitative methods, qualitative analysis to compare and complement quantitative findings, and The Delphi technique to collect and organize subject feedback for consensus. The target population includes all permanent technical functional employees at UPTs of PT XYZ (Persero) in the Central Java working area, totaling 1686 employees. Specifically, 667 employees from UPT Bogor, UPT Bandung, UPT Karawang, and UPT Bekasi were targeted. Using Slovin's formula with a 5% margin of error, a sample of 250 employees was determined. Cluster sampling was employed, treating each work unit as a cluster, with samples randomly selected from each. Data analysis involved descriptive and correlation analyses. Path analysis was used to determine the direct and indirect effects of independent variables on dependent variables, with Pearson correlation employed to analyze relationships between dimensions of these variables.

4. RESULT

The employee productivity instrument consists of 29 valid questions. The descriptive analysis results of employee productivity data showed an average of 85.43, a median of 88.5, a mode of 87, a standard deviation of 13.68, a variance of 187.25, a range of 55, a minimum score of 61, and a maximum score of 116. The class frequency distribution was conducted using Stranges' rule with the formula for the number of classes = $k = 1 + 3.3 \log n$, where n = the number of data points = 250, thus $k = 1 + 3.3 \log 250 = 8.91$, rounded to 9. Therefore, there are 9 class intervals with a class width of 7. The frequency distribution results indicated that the lowest frequency was 6% with scores ranging from 109 to 116. The highest frequency was 21.2% with scores ranging from 77 to 84 and 85 to 92.

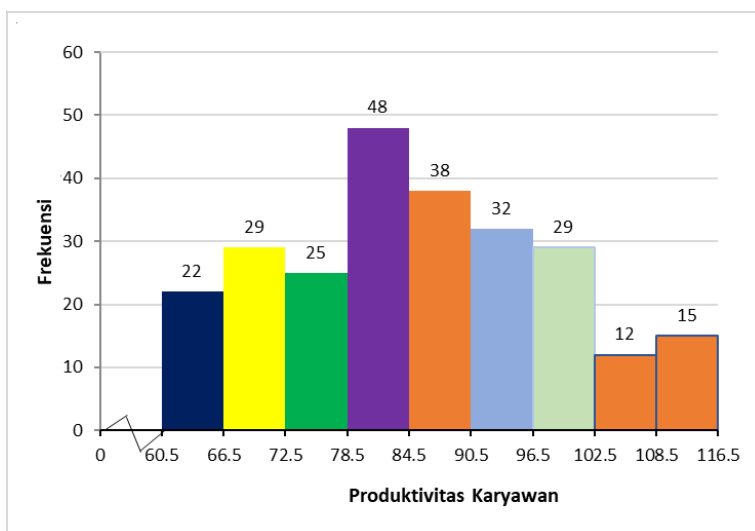


Fig. 1: Histogram employee productivity of PT XYZ

Based on the results of the correlation test between the dimensions of Occupational Health and Safety (OHS) management effectiveness and employee productivity, the highest correlation coefficient was 0.416, classified as moderate, between dimension X2 and Y1.6. This indicates a moderate and positive correlation between the communication dimension in OHS management effectiveness and the cost dimension in employee productivity. The lowest correlation coefficient in the OHS management effectiveness dimension with employee productivity was 0.075, and the highest was 0.416. Correlation coefficients ranging from 0.075 to 0.416 fall into the very weak to weak category. OHS management effectiveness indicators do not have a strong relationship with employee productivity indicators. This means that OHS management effectiveness indicators must directly within one variable meet the influence on employee productivity, as seen in the effect of OHS management effectiveness (X) on employee productivity (Y1), where a path coefficient of 0.155 was obtained.

Based on the correlation test results between the dimensions of achievement motivation and employee productivity, the highest correlation coefficient was 0.196, classified as very weak, between dimension I1 and Y1.5. This indicates a very weak and positive correlation between the personal responsibility dimension in achievement motivation and the labor dimension in employee productivity. The lowest correlation coefficient in the achievement motivation dimension with employee productivity was 0.009, and the highest was 0.196. Correlation coefficients ranging from 0.009 to 0.196 fall into the very weak category. Achievement motivation indicators do not have a strong relationship with employee productivity indicators. This means that achievement motivation indicators must directly within one variable meet the influence on employee productivity, as seen in the effect of achievement motivation (I) on employee productivity (Y1), where a path coefficient of 0.255 was obtained.

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The initial hypothesis posited is "The effectiveness of Occupational Health and Safety (OHS) management positively impacts employee productivity." As OHS management effectiveness improves, so does employee productivity, and the reverse is also true. The findings from the simple linear regression analysis between OHS management effectiveness and employee productivity revealed a positive regression coefficient b of 0.155. These findings indicate a positive correlation between OHS management effectiveness and employee productivity. The t-test results presented a t-value of 2.436. When comparing the t-value to the t-table at $\alpha=0.05$, it was observed that $t\text{-value} > t\text{-table}$ ($2.436 > 1.65$). This study's results support the statistical hypothesis by rejecting H_0 and accepting H_a , confirming a direct, significant, positive impact of OHS management effectiveness on employee productivity.

The second hypothesis stated is "Achievement motivation positively affects employee productivity." Higher achievement motivation corresponds to higher employee productivity, and the opposite holds true. The simple linear regression analysis between achievement motivation and employee productivity yielded a positive regression coefficient b of 0.255. These findings suggest a positive relationship between achievement motivation and employee productivity. The t-test results showed a t-value of 3.992. When the t-value was compared with the t-table at $\alpha=0.05$, it was found that $t\text{-value} > t\text{-table}$ ($3.992 > 1.65$). This study's findings affirm the statistical hypothesis by rejecting H_0 and accepting H_a , indicating a direct, significant, positive influence of achievement motivation on employee productivity.

The third hypothesis proposed is "Achievement motivation acts as a positive mediator in the relationship between OHS management effectiveness and employee productivity." Achievement motivation enhances the impact of OHS management effectiveness on employee productivity. The analysis revealed a positive regression coefficient b of 0.171, indicating that achievement motivation positively mediates the relationship between OHS management effectiveness and employee productivity. The Z-test results showed a Z-value of 2.398. Comparing the Z-value with the Z-table at $\alpha=0.05$, it was found that $Z\text{-value} > Z\text{-table}$ ($2.398 > 1.65$). This study's findings support the statistical hypothesis by rejecting H_0 and accepting H_a , demonstrating that achievement motivation positively mediates the effect of OHS management effectiveness on employee productivity.

5. DISCUSSION

The findings from the first hypothesis suggest a direct positive influence of effective occupational health and safety management on employee productivity, with $\beta = 0.935$ ($p = 0.000$). This conclusion is reinforced by Has & Susanty (2016) research in their article "Health and Safety Management Influence on Employee Productivity," published in *Actual Problems of Economics* Vol. 3, No. 177. Their analysis revealed a product moment correlation of 0.891 and a determinant coefficient of 0.786, resulting in the regression equation $Y = -0.006 + 0.979X$. The qualitative analysis results were consistent with the quantitative analysis, showing a direct positive impact of effective occupational health and safety management on employee productivity, with good indicators in management commitment, communication, monitoring and identification of OHS, OHS training, and implementation. Therefore, it can be concluded that effective occupational health and safety management positively affects employee productivity. Enhanced effectiveness in occupational health and safety management by the company correlates with increased employee productivity, whereas reduced effectiveness corresponds to lower productivity.

The second hypothesis results demonstrate a direct positive effect of achievement motivation on employee productivity, with $\beta = 0.379$ ($p = 0.000$). This finding aligns with Kohar (2014) study, "Productivity of Trainers Seen from Achievement Motivation, Creativity and Working Climate," which reported a significant impact of achievement motivation on productivity ($\beta = 0.743$; $p < 0.05$). Similar results were found in Wijaya et al. (2017) research, "The Influence of Situational Leadership Style, Work Environment, and Achievement Motivation on Work Productivity of State Junior High School Teachers in Sub Rayon 16 Terara, East Lombok Regency," published in the *Journal of Master of Management, University of Mataram* Vol. 6, No. 1, which showed that achievement motivation significantly and positively affects teacher productivity with a regression coefficient of 0.404, and the path analysis equation $Y = 0.069X + \epsilon$. Achievement motivation propels employees' actions and is reflected in efforts and effective strategies that optimize individual potential. Employees with high achievement motivation exhibit strong management skills, complete tasks efficiently, maintain a proactive work attitude, and show passion for their work. This motivation drives them to utilize the company's resources effectively, resulting in optimal work outputs in terms of quantity and quality, adhering to established standards. Thus, achievement motivation significantly enhances employee productivity.

Additionally, the qualitative analysis supports the quantitative findings, showing a direct positive effect of achievement motivation on employee productivity, with indicators such as personal responsibility, setting work targets, working creatively, striving to achieve goals, anticipating, and performing tasks well. Consequently, it can be concluded that achievement motivation positively influences employee productivity. Higher achievement motivation leads to increased employee productivity, whereas lower achievement motivation results in decreased productivity.

The third hypothesis results indicate an indirect effect of effective occupational health and safety management on employee productivity through achievement motivation. However, the direct path coefficient (0.935) is larger than the indirect path coefficient (0.255). This suggests that achievement motivation is less effective as a mediator in this relationship. The indirect effect is corroborated by Hedianto et al. (2014) study, "The Influence of Occupational Health and Safety (OHS) on Employee Work

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Motivation," which found that OHS significantly influences work motivation ($\beta = 0.721$; $p < 0.000$). Similarly, Wijaya et al. (2017) study, "The Influence of Situational Leadership Style, Work Environment, and Achievement Motivation on Work Productivity of State Junior High School Teachers in Sub Rayon Terara, East Lombok Regency," reported significant positive effects of achievement motivation on productivity. Moreover, Morgan et al. (2021) study, "The Mediating Effect of Job Satisfaction on Health and Safety Policy Management and Employee Productivity in Manufacturing Firms," found a significant direct effect of health and safety policy management on productivity ($\beta = 0.915$; $p < 0.000$). Both quantitative and qualitative analyses consistently show that higher effectiveness in occupational health and safety management leads to higher employee productivity, with achievement motivation playing a supportive yet less dominant role.

6. CONCLUSION

This research has successfully identified methods to address issues and enhance the productivity of permanent technical employees at PT XYZ (Persero) Central Java Transmission Unit, Western Region, through the strengthening of Occupational Health and Safety Management and Achievement Motivation based on the research findings as follows: There is a direct positive effect of the effectiveness of occupational health and safety management on employee productivity. Additionally, there is a direct positive effect of achievement motivation on employee productivity. Furthermore, there is an indirect effect of the effectiveness of occupational health and safety management on employee productivity through achievement motivation. However, the mediating effect of achievement motivation is less effective.

Future research can focus on developing more integrated Occupational Health and Safety (OHS) management models with various operational and strategic aspects of the company to enhance their effectiveness across different conditions and industry sectors. Additionally, further research can delve deeper into the factors influencing achievement motivation, including psychological, social, and specific work environment aspects, to gain a more comprehensive understanding. Employing various research methods, such as longitudinal studies or experiments, can help confirm the findings of this study and provide deeper insights into the relationship between OHS management, achievement motivation, and employee productivity. With these suggestions, future research is expected to make a more significant contribution to understanding and improving employee productivity through OHS management and achievement motivation.

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