

K3 Training as a Long-Term Investment for the Company

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Abstract

Occupational Safety and Health (K3) training is often seen as an operational burden that reduces the profitability of the company. This paradigm needs to be changed by understanding K3 training as a strategic investment that provides long-term economic returns. This study aims to analyze Occupational Safety and Health (K3) training as a form of long-term investment that provides economic value for the company. The high number of work accidents in Indonesia shows the need for a strategic approach in the management of K3. This study uses a literature review method with a qualitative descriptive approach. Data was collected through a literature review of scientific journals, research reports, and institutional publications relevant to the topic of K3 training investment. The analysis was conducted descriptively to identify patterns, trends, and consistent findings from various literature sources. Literature analysis shows that K3 training provides a return on investment through several mechanisms. Reduced operational costs are achieved through a reduction in the rate of work accidents that save on medical costs, compensation, and production downtime. Increased productivity occurs because a safer work environment improves employee morale and motivation. The creation of a competitive advantage is achieved through improving the company's reputation, ease of market access, and lowering insurance premiums.

Keywords: K3 Training, Long-Term Investment, Occupational Accidents, Occupational Safety and Health

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Introduction

Human resources (HR) are an important and inseparable asset in a company because human resources have a crucial role in carrying out various company activities. HR is not only a workforce that carries out operational tasks, but also as the main driver that determines the success and sustainability of the company in the long term (Kusuma et al., 2024). Given the importance of human resources as a company's main asset, the protection of worker safety and health is a strategic priority that cannot be ignored. The implementation of occupational safety and health (K3) is one of the important elements that directly affects employee productivity and performance in an organization. A safe, comfortable, and minimal risk of accidents will encourage employees to work optimally (Praditya et al., 2025).

Based on data from *International Labour Organization* (ILO), more than 2.3 million people worldwide die each year due to work accidents or work-related illnesses. This shows that K3 is not just an option, but an urgent need (Kompasiana, 2025). Existing K3 programs in the company (Nurhakim et al., 2024) deep (Yankees, 2025) have advantages and disadvantages, such as lack of regular inspections and adequate training. There are still many companies that have not fully internalized the values of occupational safety and health as an integral part of their company culture (Ghofur et al., 2024).

Data shows that every year there are thousands of cases of work accidents that result in significant financial losses for companies, ranging from compensation costs, medical costs, to decreased productivity due to labor losses. This problem is increasingly complex because most companies still view occupational safety and health (K3) programs as an operational cost burden rather than a strategic investment. Several factors such as lack of understanding of the importance of OSH, lack of adequate training, and lack of effective communication about OSH issues can be obstacles in creating a strong safety culture in the workplace (P. M. Hasibuan et al., 2023). However, this paradigm needs to be changed. K3 is not a burden, but an investment that leads the company to a brighter future (Certification, 2024).

The Government of Indonesia has established a strong legal foundation for the implementation of K3 through Law Number 1 of 1970 concerning Occupational Safety as the main legal umbrella, which is strengthened by the Regulation of the Minister of Manpower Number 5 of 1996 concerning Occupational Safety and Health Management System and Government Regulation Number 50 of 2012 which defines K3 as all activities to ensure and protect the safety and health of the workforce through preventive efforts work accidents. However, despite the availability of regulations, the level of implementation of K3 in various sectors still varies, especially in the informal sector and small and medium-sized enterprises, which often lack resources and supervision (RST et al., 2021). Optimal implementation is still constrained by the company's erroneous view of the value of K3 training investment.

The investment in K3 training creates an integrated safety culture in all aspects of the company's operations, generating a return on investment through reducing work accident compensation costs, minimizing production downtime, and establishing the company's reputation as a responsible employer of choice, so as to be able to attract and retain the best talent while strengthening long-term competitiveness.

Literature Review

Occupational Safety and Health (K3) is a fundamental aspect of the company's operations that is not only related to the protection of employees, but also to the sustainability of the business as a whole. According to (Widodo, 2015) Occupational Health and Safety (K3) is a field related to the health, safety, and welfare of humans working in an institution or project site. Meanwhile, according to (M. S. Hasibuan, 2020) The definition of Occupational Safety and Health (K3) is to improve and maintain the highest degree of all work both physically, mentally and socially in all types of companies, prevent the occurrence of health problems

caused by work, protect workers in every job from risks caused by factors that interfere with health, place and maintain workers in a work environment that is in accordance with the physiological and psychological conditions of the worker and to create a fit between work and workers and everyone with their duties.

(Dessler, 2017) stated that K3 training is an investment in human resources that aims to improve workers' knowledge, skills, and attitudes towards occupational safety and health. These investments not only protect the company's human assets, but also create added value through increased productivity and operational efficiency. (Heinrich, 1931) In his famous theory, he stated that work accidents occur due to a series of interrelated factors, such as a falling domino. This theory emphasizes the importance of prevention through training and education as a way to break the chain of causes of accidents.

(Becker, 1964; Schultz, 1961) In human capital theory, it is stated that investment in employee education and training, including K3 training, will increase the productivity and economic value of the company. K3 training improves the quality of human resources which in turn will reduce operational costs and increase efficiency. (Boardman et al., 2018) explains that any investment, including K3 training, must be evaluated based on the comparison of costs and benefits obtained. The long-term benefits of training far outweigh the cost of the initial investment.

Research Methods

This study uses a descriptive-qualitative literature review method with the aim of analyzing and synthesizing various literature sources related to Occupational Safety and Health (K3) training as a form of long-term investment for the company. Literature review is the process of evaluating and critically analyzing various researches, theories, or publications relevant to a particular topic. In literature review, researchers collect, review, and analyze previous works related to research topics (Kraus et al., 2022). According to (Scott, 2021) The descriptive qualitative research method is a research based on the philosophy of postpositivism used to research the condition of natural objects where the researcher is the key instrument. The data used were obtained from scientific journals, reference books, research reports, and other relevant documents published in the last five to ten years. The analysis was carried out by identifying the patterns, benefits, and strategic implications of K3 training on productivity, cost efficiency, and company sustainability.

Result and Discussion

4.1 Cost-Benefit Analysis of K3 Training

The K3 training cost-benefit analysis is an economic evaluation methodology that compares the total costs incurred for the occupational safety training program with the economic benefits obtained by the organization. It involves comparing the cost of training (such as instructor costs, materials, and employee time) to the benefits obtained (such as increased productivity, reduced accidents, and improved morale).

The cost component includes direct costs such as instructor fees, training materials, and operations (venue, consumption, certification), as well as indirect costs such as employee opportunity costs and program administration. For example, PT Freeport Indonesia spent IDR 2.5 billion on a K3 training program that includes 5,000 employees with an average of 40 hours of training per person, consisting of instructor fees (IDR 800 million), materials and certifications (IDR 500 million), operational (IDR 700 million), and *employee opportunity costs* (IDR 500 million). The benefits obtained include a 35% reduction in work accidents that saved medical costs and compensation of IDR 3.2 billion, a 12% increase in productivity equivalent to IDR 1.8 billion, and a 20% reduction in insurance premiums worth IDR 400 million, resulting in a total benefit of IDR 5.4 billion with an ROI of 116% in a one-year period.

The CBA methodology of K3 training uses a quantitative approach with NPV, BCR, and ROI formulas, where research shows consistently positive results. The study in the construction sector of PT Wijaya Karya used $BCR = 4.2$, meaning that every Rp 1 investment in K3 training yields a benefit of Rp 4.2 through a 40% reduction in the accident rate (from 15 to 9 cases per 1000 workers), a 15% increase in productivity, and a saving in medical costs of Rp 1.2 billion. The main challenge of CBA implementation lies in the difficulty of monetizing intangible benefits such as improving employee safety and morale cultures, as well as the complexity of isolating the impact of training from other factors. Nonetheless, longitudinal research across various sectors shows that K3 training investments consistently generate a positive ROI of 300-500% on average over a period of 3-5 years, making CBA a vital instrument for evidence-based occupational safety investment decision-making.

4.2 The Impact of K3 Training on Safety Culture and Organizational Performance

Occupational Safety and Health (K3) training is an important part of the company's strategy to create a safe and low-risk work environment. The provision of this training not only aims to equip employees with knowledge of safety procedures, but also encourage more careful and responsible changes in work behavior. Over time, K3 training is able to form a strong safety culture, where each individual feels responsible for the safety of himself and his colleagues. This kind of culture reinforces the collective awareness of the importance of preventing work accidents, which ultimately reduces the number of incidents and operational disruptions in the company.

Furthermore, the impact of K3 training is also seen in improving overall organizational performance. When the risk of accidents is reduced, productivity tends to increase because it is not disturbed by labor absences due to injury or damage to work tools. K3 training also increases employee job satisfaction because they feel protected and valued, which has an impact on loyalty and morale. Thus, the company's investment in K3 training provides tangible results for the achievement of business goals, both in terms of operational efficiency and the company's reputation in the eyes of the public and stakeholders.

4.3 Implementation Strategy and Evaluation of the Effectiveness of K3 Training Programs

The implementation strategy of the K3 training program refers to a systematic approach that includes planning, implementation, and evaluation stages designed to transfer occupational safety knowledge to employees. Successful implementation begins with a *Training Needs Analysis* that identifies K3 competency gaps through safety audits, accident statistical analysis, and workplace risk assessments. For example, PT Pertamina uses a *blended learning* model that combines *e-learning* (40%), classroom training (35%), and field practice (25%) for 15,000 employees with a duration of 80 hours per year. This strategy resulted in an increase in K3 knowledge scores from 65% to 87% in pre-post tests, a reduction in *the incident rate* from 2.3 to 0.8 per 100,000 working hours, and an increase in compliance with safety procedures from 70% to 94%. The evaluation method used *Kirkpatrick's Four-Level Model* which measured *reaction* (participant satisfaction level 4.2/5), *learning* (34% increase in knowledge), *behavior* (changes in work behavior observed through *safety observation* 78%), and *results* (reduction in work accident costs of Rp 2.8 billion).

The evaluation of the effectiveness of the K3 training program uses a multi-dimensional approach that combines quantitative and qualitative indicators to measure the impact of training on occupational safety performance. Quantitative indicators include *frequency rate*, *severity rate*, *near miss reporting*, and *safety audit scores*, while qualitative indicators include *safety culture assessment* and *behavioral safety observation*.

PT Holcim Indonesia implements a real-time evaluation system using a digital dashboard that monitors 12 safety KPIs on a daily basis, including a 340% increase in the number of *hazard identification* reports (from 150 to 660 reports per month), a 96% safety meeting participation rate, and a safety behavior checklist score that increased from 2.8 to 4.1 on a scale of 5. Key challenges in the evaluation include the isolation of training impacts from external factors, the measurement of safety culture changes, and the sustainability of long-term training outcomes. Longitudinal research shows that K3 training programs that integrate microlearning, simulation-based training, and peer-to-peer learning produce an 85% knowledge retention rate after 6 months and a 42% reduction in lost time injury rate in an 18-month period, proving that structured implementation strategies and systematic evaluation are key to the success of K3 training programs.

Conclusion

K3 training is not just a cost center, but a strategic investment that provides significant returns in the long term. Empirical evidence shows that every rupiah invested in K3 programs can generate 2-4 times returns through reduced operational costs, increased productivity, and the creation of competitive advantages. To achieve optimal ROI, companies need to adopt a systematic approach that integrates K3 training into the overall business strategy, with a focus on *continuous improvement* and *sustainability programs*. This investment not only protects the company's human assets but also creates added value for all *stakeholders*.

References

- Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis*. University of Chicago Press.
- Boardman, A. E., Greenberg, D. H., Vining, A. R., & Weimer, D. L. (2018). *Cost-Benefit Analysis: Concepts and Practice*. Cambridge University Press.
- Dessler, G. (2017). *Human Resource Management* (Ninth Edition). Gramedia Group Index.
- Ghofur, M. A., Maulana, M. A. F., Muriyanto, Y. D., Winarta, W. T., & Radianto, D. O. (2024). Occupational Safety and Health Awareness (K3): The Key to Company Success in Managing Risk and Productivity. *Journal of Educational Innovation and Public Health*, 2(2), 116–133. <https://doi.org/https://doi.org/10.55606/innovation.v2i2.2880>
- Hasibuan, M. S. (2020). *Human Resource Management Revised Edition*. PT Bumi Aksara.
- Hasibuan, P. M., Wirdayani, A., Hasibuan, D. F., Nurhasanah, S. A., Adisti, P., Mutia, S., & Utami, T. N. (2023). Challenges in the Implementation of Occupational Health and Safety (K3) in Multinational Companies in Indonesia. *IJM: Indonesian Journal of Multidisciplinary*, 1(2), 643–653.
- Heinrich, H. W. (1931). *Industrial Accident Prevention*. McGraw-Hill.
- Compassion. (2025). *Why is K3 the best investment for your company?* Kompasiana.Com. https://www.kompasiana.com/112020037egihergiyan4055/677d368ced64153c890a6564/mengapa-k3-adalah-investasi-terbaik-untuk-perusahaan-anda?page=all&page_images=2
- Kraus, S., Breier, M., Lim, W. M., Dabic, M., Kumer, S., Kanbach, D., Mukherjee, D., Corvello, V., Chousa, J. P., Ligouri, E., Marques, D. P., Schiavone, F., Ferraris, A., Fernandes, C., & Ferreira, J. J. (2022). Literature Reviews As Independent Studies: Guidelines For Academic Practice. *Rev Manag Sci*, 16, 2577–2595. <https://doi.org/https://doi.org/10.1007/s11846-022-00588-8>
- Kusuma, H. D. K. W., Zahiraa, T., Tri, T. D. M., & Radianto, D. O. (2024). The Effect of Occupational Safety and Health Levels in the Company on Employee Performance. *Journal of Educational Innovation and Public Health*, 2(2), 60–71.
- Nurhakim, R., Saefullah, A., Fahri, F., Arza, Z., Firdaus, A., Noor, M. A., Tjiwidjaja, H., &

- Hidayatullah, S. (2024). Socialization of PTSD. Jasa Raharja Due to a traffic accident. *Journal of Community Research & Engagement*, 1(1), 61–74. <https://doi.org/10.60023/80wvva94>
- Praditya, R. A., Prayuda, R. Z., & Purwanto, A. (2025). The Impact of the Implementation of 5Rs (Concise, Neat, Clean, Careful, Diligent) and K3 (Occupational Safety and Health) on Company Performance. *Professional Education Studies and Operations Research*, 2(1), 31–45.
- R.S., R., Yulistria, R., Handayani, E. P., & Nursanty, S. (2021). The Influence of Occupational Safety and Health (K3) on Employee Work Productivity. *Swabumi Journal*, 9(2), 155~166.
- Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review*, 51(1), 1–10.
- Certification, M. (2024). *K3 is not a burden, but an investment*. Mysertifikasi.Com. <https://mysertifikasi.com/k3-bukan-beban-tapi-investasi/>
- Sugiyono. (2021). *Qualitative Quantitative Research Methods and R&D*. Alfabet.
- Widodo, S. E. (2015). *Human Resource Development Management*. Student Library.
- Yani, A. (2025). The Effectiveness of Occupational Safety Training in Construction and the Role of Management in Improving K3 Compliance; Literature Review. *Scientific Journal of Management and Business Economics*, 3(1), 8–17.