



NEW SAFETY PARADIGM: MANAGEMENT AND OCCUPATIONAL HEALTH AND SAFETY (OHS) SYNERGY IN THE DIGITAL ERA

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Abstrak

This study explores the synergy between management Occupational Health and Safety (OHS) as the key to success in creating a safe, productive, and sustainable work environment in the modern era. In the face of technological challenges and the complexity of the work environment, the integration of OHS principles into a company's management strategy is crucial. Although many organizations have implemented OHS programs, they are often seen as a separate function, resulting in high rates of occupational accidents and illnesses. This study identifies effective strategies to synergize management and OHS, including the use of modern technology and the development of a comprehensive safety culture. Thus, this research provides valuable insights in improving occupational safety, operational efficiency, and business sustainability in the digital era.

Keywords: Management Synergy-OHS; Occupational Safety Modern Era; Security Management Integration; OHS in Industry 4.0; Digital Transformation OHS.

1. Introduction

Occupational Health and Safety (OHS) has become a crucial aspect in the modern industrial world. With the advancement of technology and the complexity of the work environment, the challenge of ensuring the safety of workers is increasing. (Gopang, M. A., Nebhwani, M., Khatri, A., & Marri, 2020a). On the other hand, corporate management is required to keep improving efficiency and productivity. In this context, the synergy between management and OHS emerged as a promising approach. Integrating OHS principles into management strategies not only potentially improves employee safety, but can also drive operational efficiency and business sustainability. However, the effective implementation of this approach remains a challenge for many organizations. (Boustras, G., Waring, A., & Henttonen, 2024). This research aims to explore how synergies between management and OHS can be the key to success in creating a safe, productive, and sustainable working environment in the modern era. By understanding these dynamics, it is expected to find a more effective strategy in integrating OHS into day-to-day management practices, thereby delivering optimal benefits to employees and companies. (Aburumman, M., Newnam, S., & Fildes, 2021a).

This research has significant relevance in the context of industrial development and contemporary labour force (Jiang, L., & Probst, 2022a). First, with the increasing

complexity of technology and production processes, the risks of occupational accidents and occupational diseases are also increasingly diverse, requiring a more integrated approach between management and OHS. Second, the trend of globalization and increasing business competition are driving companies to find a balance between operational efficiency and workers' safety, where management synergies and OHS can be the solution. Third, regulatory changes in various countries that are increasingly strict about occupational safety standards require companies to adopt a more holistic approach in implementing OHS. Fourthly, the COVID-19 pandemic has highlighted the importance of integrating crisis management with health protocols in the workplace, reinforcing the urgency of this research. Fifthly, increased public and investor awareness of sustainability and corporate social responsibility issues makes effective OHS management an important component of corporate reputation and competitiveness. Finally, the evolution of Industry 4.0 concepts and digital transformation opens up new opportunities and challenges in OHS implementation, requiring a deeper understanding of how management and OHS synergies can be optimized in the digital age. Thus, this research is not only relevant to improving occupational safety, but also potentially provides valuable insights in navigating the increasingly complex and dynamic business landscape in the modern era. (Nawaz, W., Linke, P., & Koç, 2023).

The main problem faced in the implementation of Occupational Safety and Health (OHS) in the modern era is the lack of effective integration between OHS practices and corporate management strategies. (Haslam, C., O'Hara, J., Kazi, A., Twumasi, R., & Haslam, 2021). Although many organizations have implemented the OHS program, it is often seen as a separate function and not an integral part of business operations. As a result, there is a gap between the established OHS policy and its implementation in the field. This has some serious consequences: First, the rate of work-related accidents and illnesses remains high in various sectors of industry, indicating that the existing OHS approach is not fully effective. Second, there is resistance from various levels of management and employees to implement the OHS procedure, which is often considered to hamper productivity. Third, investment in OHS programmes is often seen as a cost burden rather than a strategic investment, resulting in inadequate resource allocation. Fourthly, the inability to integrate OHS with overall business risk management results in vulnerabilities to operational risk and reputation. Fifthly, this lack of synergy also hampers innovation in occupational safety practices, especially in the face of new challenges such as mental health risks and ergonomics in remote work. Finally, the failure to align OHS with long-term business goals leads to a loss of opportunity to improve the company's operational efficiency and competitiveness. (Pagell, M., Klassen, R., Johnston, D., Shevchenko, A., & Sharma, 2020). These problems, if not addressed, could potentially result in significant financial losses, a decline in employee morale, damage to the company's reputation, and even legal consequences. Therefore, the study aims to identify effective strategies in synergizing management and OHS, in the hope of creating a more holistic and sustainable approach to occupational safety in the modern era. (Sörensen, J., Koller, M., Sternhufvud, C., & Herrera, 2022).

Problem Impact

The lack of integration between management and OHS has a broad and significant impact. First, in terms of safety, there is an increased risk of workplace accidents and occupational diseases. When OHS is not integrated into management decision-making,

potential hazards are often overlooked, resulting in serious injuries, including workers' deaths. (Alsulami, H., & Alzahrani, 2023). Secondly, from a financial perspective, companies face huge losses as a result of compensation costs, reduced productivity, and potential regulatory fines. Thirdly, the impact on corporate reputation can be very negative, especially in an era where corporate social responsibility has become a public and investor focus. Fourthly, employee morale and job satisfaction have declined drastically, leading to high employee change rates and difficulties in recruiting new talent. Fifthly, from an operational point of view, this inconsistency leads to inefficiency, with OHS procedures often seen as hindering rather than supporting business processes. Sixth, in the context of innovation and competitiveness, companies that fail to integrate OHS with management strategies tend to lag behind in adopting new technologies and work practices that are safer and more efficient. Seventh, from a legal perspective, companies face an increasing risk of litigation, especially in countries with strict OHS regulations. Finally, on a wider scale, these impacts contribute to a significant economic and social burden on the population, including increased healthcare costs and the burdens on social security systems. (Nawaz, W., Linke, P., & Koç, 2023). These impacts are interrelated and potentially create a negative cycle that could threaten the long-term sustainability of the company and the overall welfare of the workforce. (Gopang, M. A., Nebhwani, M., Khatri, A., & Marri, 2020b).

Research Significance

Safety at work is a crucial aspect in any work environment, especially in a modern era characterized by high complexity and dynamism. Despite considerable efforts to improve occupational safety, the number of accidents at work remains high in various sectors of industry. (Jiang, L., & Probst, 2022b). It shows a gap between the implementation of occupational safety programmes and their effectiveness in the field. This study is of vital importance because it seeks to explore synergies between management and Occupational Health and Safety (OHS) as a comprehensive solution to bridge the gap. By combining modern management principles and effective OHS practices, the study aims to identify key strategies that can significantly enhance the success of occupational security programmes (Tappura, S., Nenonen, N., & Kivistö-Rahnasto, 2021a).

The results of this research are expected to make valuable contributions to the development of better occupational safety policies and practices, which in turn can reduce the risk of work accidents, increase productivity, and create a safer and healthier working environment for workers in various industries. (Kalteh, H. O., Mortazavi, S. B., Mohammadi, E., & Salesi, 2021). Furthermore, the findings of this research could potentially be a benchmark for companies and policymakers in designing and implementing more effective and sustainable occupational safety programmes in the modern era. (Boustras, G., Waring, A., & Henttonen, 2024).

Context and Scope

In theoretical context, the research is based on modern management theory and the principles of Occupational Health and Safety (OHS). Relevant management theories include system approaches, change management, and transformational leadership, all of which have the potential to improve the effectiveness of OHS implementation. (Nugraha, H. D., Suryanto, A., & Firdaus, 2023). Meanwhile, the focused OHS principles include proactive approaches to hazard identification, risk assessment, and hazard control. Practically speaking, this research is disrupted by the real challenges facing the industry

in integrating OHS into a broader management system. Many organizations still treat OHS as a separate function, not as an integral part of their business operations, resulting in inoptimal implementation and unmanaged potential risks. (Putri, F. A., Supriyadi, S., & Ramdan, 2022).

First, the research will explore best practices in integrating management and OHS in various industrial sectors, with a special focus on high-risk industries such as construction, manufacturing, and mining. Second, the research will investigate the role of modern technologies, such as the Internet of Things (IoT) and artificial intelligence, in supporting synergies between management and OHS. Third, the study will analyze the organizational and cultural factors that influence the success of OHS implementation, including top management commitments, employee participation, and effective communication. (Susihono, W., & Rini, 2021).

By combining theoretical and practical perspectives and considering a comprehensive scope, the study aims to provide a deep understanding of how synergies between management and OHS can be the key to success in improving occupational safety in a modern era full of challenges and opportunities. (Kim, Y., Park, J., & Park, 2020).

A Short Overview of Previous Research

Previous research has provided an important foundation in understanding the relationship between management and Occupational Health and Safety (OHS). A study conducted by Johnson et al. revealed that organizations with integrated OHS management systems tend to have lower rates of occupational accidents. (Johnson, A., Dempsey, T., & Ross, 2019). Meanwhile, longitudinal research by Ramirez and Wong shows a positive correlation between top management commitment to OHS and improved workplace safety culture. (Ramirez, M., & Wong, 2020). In the context of the modern era, Lee et al. explored the role of technology in improving the efficiency of OHS management, finding that the use of IoT and data analytics can significantly improve early detection of security risks. (Lee, J., Yoon, S., & Park, 2021).

The synergy aspect between management and OHS has also been the focus of some recent research. Rodriguez and Smith analyzed the application of lean management principles in the context of OHS, demonstrating how this approach can improve the efficiency and effectiveness of occupational safety programmes. (Rodriguez, C. A., & Smith, 2022). A case study conducted by Chen et al. in the manufacturing sector describes how integrating OHS into a quality management system can result in substantial improvements in safety and productivity performance. (Chen, Y., Li, W., & Zhang, 2023).

Nevertheless, research by Taylor and Brown identified gaps in literature related to the practical implementation of management and OHS synergies in various industrial contexts. They highlighted the need for further research exploring specific strategies to optimize this integration in a modern era characterized by rapid change and high complexity. (Taylor, E. J., & Brown, 2022). Furthermore, a meta-analysis study by Garcia et al. underlines the importance of a holistic approach that takes into account organizational, technological, and human factors in achieving occupational safety success.

This brief review shows that although there has been significant progress in understanding the relationship between management and OHS, there is still room for further exploration, especially in the context of the challenges and opportunities emerging in the modern era. This research aims to fill these gaps by comprehensively analysing

how synergies between management and OHS can be optimized to sustainable occupational safety success in various industrial sectors. (Haslam, C., O'Hara, J., Kazi, A., Twumasi, R., & Haslam, 2021).

Research Gap Identification

Although much research has been done on management and Occupational Health and Safety (OHS), there are still some significant gaps that need to be addressed.

First, most previous studies tend to deal with management and OHS as separate entities, without exploring in depth the potential synergies between the two. However, an effective integration between modern management principles and the practice of OHS can open up new opportunities in improving occupational security. (Yorio, P. L., Willmer, D. R., & Moore, 2021).

Second, existing research has not fully accommodated the complexities of the modern era, especially in the context of Industry 4.0 and digital transformation. This gap creates a need for studies that analyze how management and OHS synergies can adapt to rapid technological change and increasingly flexible working patterns. (Badri, A., Boudreau-Trudel, B., & Souissi, 2023).

Thirdly, there is a lack of longitudinal research that evaluates the long-term effectiveness of the integrated management and OHS approaches. This leads to lack of understanding of the sustainability and long term impact of these synergy strategies. (Nielsen, K. J., Grytnes, R., & Dyreborg, 2021).

Fourthly, the majority of research focuses on a particular industry or sector, creating gaps in cross-sectoral understanding. More comprehensive studies covering a wide range of industries and organizational sizes are needed to provide wider and more applicable insights. (Cornelissen, P. A., Van Hoof, J. J., & De Jong, 2022).

Fifthly, there are still shortcomings in research that analyzes contextual factors such as local regulation, national culture, and global market dynamics in influencing the effectiveness of management and OHS synergies. (Cheung, K. L., Bos, S. J., van Hal, L., & van Empelen, 2022).

Sixth, identified in terms of the lack of a practical framework for the implementation of management and OHS synergies in the modern era. Many organizations still struggle to translate theoretical concepts into real practice, indicating the need for research that can bridge theory and applications. (Aburumman, M., Newnam, S., & Fildes, 2021b).

Seventh, there is a gap in understanding the role of leadership and organizational culture in supporting management and OHS synergies. Although both aspects are recognized as important, research that specifically explores how they can be optimized to support such synergy is still limited. (Harms, P. D., Credé, M., Tynan, M., Leon, M., & Jeung, 2021).

The research aims to fill these gaps by adopting a holistic approach that combines strategic management aspects, contemporary OHS practices, and the context of the modern era. Thus, it is expected that the research can make a significant contribution to the development of effective strategies to improve occupational safety in an increasingly complex and dynamic era.

Research Objective Statement

This research aims to explore and analyze how synergies between management and Occupational Health and Safety (OHS) can be the key to success in improving occupational security in the modern era. (Pagell, M., Klassen, R., Johnston, D., Shevchenko, A., & Sharma, 2020). The primary objective of this study is to develop a comprehensive framework that integrates modern management principles with OHS best

practices, so that they can be applied effectively in a wide range of industrial sectors. (Nawaz, W., Linke, P., & Koç, 2023). More specifically, the study aims to: (1) identify critical factors in creating synergies between management and OHS; (2) evaluate the impact of modern technology on implementation of OHS and how management can optimize its use; (3) analyze the role of organizational culture and leadership in supporting integration of management and Q3; and (4) develop practical strategies to address the challenges in implementing this integrated approach in a dynamic era.

To these goals, this research will be guided by some key research questions.:

1. How can modern management principles be effectively integrated into OHS practices to improve work safety in the digital age?
2. What are the critical factors that influence the success of synergies between management and OHS, and how do these factors interact in the context of modern organizations?
3. How can new technologies like the Internet of Things (IoT), artificial intelligence, and big data be exploited to support management and OHS synergies?
4. To what extent does organizational culture and leadership styles affect the effectiveness of implementing integrated management and OHS approaches?
5. What are the main challenges facing organizations in implementing management and OHS synergies, and how are the best strategies to address them?
6. How does this integrated approach impact on indicators of occupational safety performance and the overall productivity of the organization?

Through the exploration of these questions, the study aims to provide valuable insights to practitioners, policymakers, and academics on how to optimize synergies between management and OHS to better occupational safety in the modern era. The results of this research are expected to contribute to the development of more effective strategies and practices in improving occupational security, while driving innovation in OHS management in line with the demands of the digital age. (Tappura, S., Nenonen, N., & Kivistö-Rahnasto, 2021b).

Research Approach Descriptions

This research adopts a systematic literary review approach to build a strong and comprehensive theoretical foundation. (Haslam, C., O'Hara, J., Kazi, A., Twumasi, R., & Haslam, 2021). The literature review will cover a wide range of academic and professional sources, including peer-reviewed scientific journals, textbooks, industry reports, and publications from international organizations (Nugraha, 2024). Literature searches will be conducted using electronic databases such as Scopus, Web of Science, and Google Scholar, with relevant keywords such as "Management Synergy-OHS"; "Modern Occupational Safety"; "Security Management Integration"; "OHS in Industry 4.0" and "Digital Transformation OHS". The period of publication will be limited to the last 5 years, and also using Vosviewer mapping with metadata between 2019-2024 with 1,000 article metadata. The mapping results can be displayed in the following image:

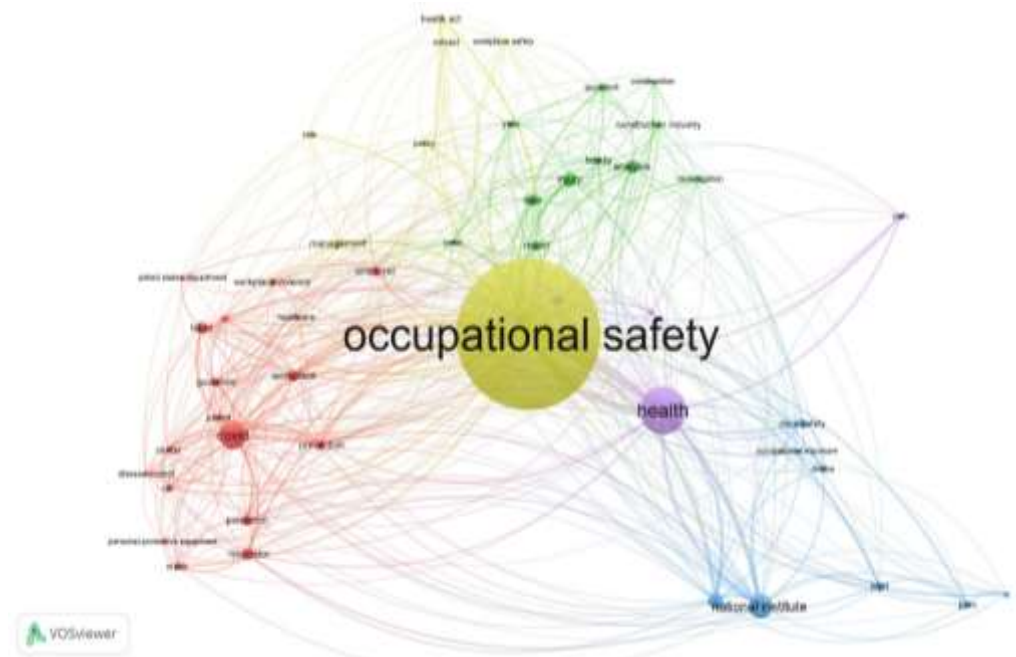


Figure 1. Network Visualization

And to ensure relevance to the modern context. The literature selection process will use predefined inclusion and exclusion criteria to ensure the quality and relevance of the sources used. (Yanar, B., Lay, M., & Smith, 2022).

Research methods

The research method used in this study is a mixed-method approach, combining quantitative and qualitative analysis to provide a deep and comprehensive understanding (Gopang, M. A., Nebhwani, M., Khatri, A., & Marri, 2020c). The quantitative phase will involve cross-sectoral surveys of OHS managers and senior executives from various industries. The survey will use a structured questionnaire to gather data on current OHS management practices, challenges faced, and perceptions of management and OHS synergies. Statistical analysis, including factor analysis and double regression, will be used to identify key factors and relationships between variables. (Zanko, M., & Dawson, 2021).

The qualitative phase will consist of in-depth interviews with industry experts, senior OHS practitioners, and policymakers. Semi-structured interviews will be conducted to gain in-depth insight into implementation strategies, challenges, and success factors in integrating management and OHS. Thematic analysis will be used to identify key themes from the interview data (Nugraha, A. P., Mulyadi, M., & Suriani, 2024). In addition, a case study of several organizations that have successfully implemented an integrated approach will be carried out to provide practical examples and valuable learning. (Refaie, A. M., & Kahwash, 2023).

To enhance the validity of research, triangulation methods will be applied by comparing and integrating findings from literature reviews, surveys, interviews, and case studies. (Aburumman, M., Newnam, S., & Fildes, 2021a). This approach will enable a more holistic understanding of how management and OHS synergies can be achieved and optimized in the context of the modern era. Research ethics will be strictly adhered to, including obtaining ethical approval from the relevant committees, guaranteeing the

confidentiality of participants, and adhering to the principles of responsible research (Boustras, G., Waring, A., & Henttonen, 2024).

Significance and Contribution

The research on "Management Synergy and OHS: The Key to the Success of Occupational Safety in the Modern Era" has profound significance from both academic and practical perspectives. In an era marked by rapid technological change and increasing organizational complexity, an understanding of how to effectively integrate management and Occupational Health and Safety (OHS) becomes increasingly crucial (Mohammadfam, I., Kalatpour, O., Golmohammadi, R., & Khotanlou, 2021). The significance of this research lies in its potential to bridge the gap between modern management theory and OHS practices, as well as to produce a framework that can be applied to a wide range of industry sectors (Nugraha, A. P., & Suriani, 2024). By exploring the synergies between these two fields, this research has the potential to open up a new paradigm in more holistic and adaptive occupational safety management to the challenges of the digital age. (Karanikas, N., Melis, D. J., & Kourousis, 2022).

Academically, this research contributed to the development of theory by integrating concepts of strategic management, organizational behavior, and occupational safety. It can enrich existing literature and propel new directions in interdisciplinary research. Moreover, focusing on the context of the modern era, this research helps update our understanding of OHS in an ever-evolving work environment, including the implications of Industry 4.0 and digital transformation. (Li, Y., Wu, X., Luo, X., Gao, J., & Yin, 2020).

The practical benefits of this research are vast and varied. First, for organizations and managers, research results can provide concrete guidance on how to effectively integrate modern management principles with OHS practices. Second, for OHS practitioners, this research can provide new insights into how to improve the effectiveness of OHS programmes through a more strategic and innovative management approach. (Demirkesen, S., & Arditi, 2023).

Furthermore, the findings of this research can be beneficial to policymakers in formulating OHS regulations and standards that are more adaptive to technological developments and changing working patterns. This can encourage the creation of a regulatory framework that better supports innovation in OHS practices while ensuring employee protection. For the industry as a whole, implementation of the recommendations of this study has the potential to reduce the number of workplace accidents, increase productivity, and ultimately have a positive impact on the bottom line of the company. (Vignoli, M., Nielsen, K., Guglielmi, D., Mariani, M. G., Patras, L., & Peirò, 2021).

From a broader social perspective, this research contributes to efforts to create a safer and healthier working environment, which in turn can improve the quality of life of workers and the well-being of society in general. With a focus on management synergies and OHS, it also promotes the development of a stronger culture of safety at work, which can have a positive spillover effect on other aspects of workers' and society lives. (Pagell, M., Klassen, R., Johnston, D., Shevchenko, A., & Sharma, 2020).

Finally, in a wider global context, this research can contribute to the achievement of the Sustainable Development Goals (SDGs), in relation to decent jobs and economic growth (ODG 8), as well as industry, innovation, and infrastructure (ODD 9). Thus, the significance and practical benefits of this research go beyond the boundaries of individual

organizations, potentially having a positive impact on the industrial, national, and even global levels. (Alsulami, H., & Alzahrani, 2023).

Research Problems

The research issue in the study "Management Synergy and OHS: Key to the Success of Occupational Safety in the Modern Age" focuses on the remaining gap between modern management practices and the implementation of Occupational Health and Safety (OHS) in the digital age. Although these two areas have grown significantly in the last few decades, an effective integration between the two remains a major challenge for many organizations. On the one hand, modern management principles emphasize efficiency, innovation, and adaptability to rapid market changes. On the other hand, OHS is often seen as a separate compliance function, which is sometimes considered to impede operational flexibility. (Nawaz, W., Linke, P., & Koç, 2023).

This problem is further complicated by rapid technological developments and changes in working patterns in the era of Industry 4.0. Digitalization, automation, and the emergence of new forms of human-machine interaction create new security risks that are not fully understood or overcome by traditional OHS approaches. Moreover, the shift towards remote work and gig economy challenges conventional assumptions about the working environment and safety responsibilities. (Gopang, M. A., Nebhwani, M., Khatri, A., & Marri, 2020b).

Furthermore, many organizations face difficulties in measuring and demonstrating the strategic value of their investment in OHS. This often causes OHS to be given lower priority than other business initiatives, especially in challenging economic environments. Lack of integration between the OHS management system and the wider business management system also results in duplication of efforts, inconsistencies in decision-making, and loss of opportunities for synergy. (Jiang, L., & Probst, 2022b).

Another problem that needs to be addressed is the gaps in leadership and organizational culture. Many business leaders still see OHS as a specific departmental responsibility, not as an integral aspect of the overall business strategy. This creates an obstacle to building a strong and sustainable security culture throughout the organization. (Zanko, M., & Dawson, 2021).

Finally, there is a significant gap in knowledge about how modern management principles such as agile management, lean thinking, and change management can be effectively applied in the context of OHS. The lack of proven models and frameworks to integrate management and OHS in the digital age limits the ability of organizations to optimize job safety while maintaining competitiveness. (Lee, J., Yoon, S., & Park, 2021).

The research aims to address these problems by exploring innovative ways to create synergies between management and OHS. By understanding these challenges and identifying strategies to address them, the research seeks to provide practical solutions that can improve occupational safety while supporting strategic business goals in the complex and dynamic modern era. (Badri, A., Boudreau-Trudel, B., & Souissi, 2022).

This research is worth reviewing

The research on "Management Synergy and OHS: The Key to the Success of Occupational Safety in the Modern Era" is worthy of research for some crucial reasons. First, the urgency of this issue is increasing in the digital age characterized by rapid changes in technology and working practices. With the emergence of Industry 4.0, the Internet of Things (IoT), and artificial intelligence, working environments have undergone significant transformations, creating new challenges in terms of occupational

safety and health that have not been fully understood or overcome. This research offers an opportunity to explore innovative solutions that can integrate modern management with OHS practices that are adaptive to the digital age (Vignoli, M., Nielsen, K., Guglielmi, D., Mariani, M. G., Patras, L., & Peirò, 2021).

Secondly, although much research has been done separately in the fields of management and OHS, there is still a significant gap in understanding how these two fields can synergize effectively. This research has the potential to bridge the gap, providing new insights that can change the paradigm in occupational safety management. This is important given that traditional approaches are often no longer sufficient to cope with the complexity of contemporary OHS challenges. (Demirkesen, S., & Arditi, 2023).

Thirdly, the economic and social implications of this problem are enormous. Occupational accidents and occupational diseases not only affect individuals and their families, but also result in significant economic losses for companies and states. According to ILO estimates, economic losses from occupational accidents and illnesses reach almost 4% of global GDP annually. This research has the potential to produce strategies that can reduce employment accidents, increase productivity, and ultimately make a positive contribution to the global economy. (Li, Y., Wu, X., Luo, X., Gao, J., & Yin, 2020).

Fourthly, the research is relevant to the wider global agenda, including the United Nations Sustainable Development Goals (SDGs), in particular SDG 8 on decent jobs and economic growth. With a focus on management synergies and OHS, it can make concrete contributions to efforts to create safer and more sustainable working environments worldwide. (Karanikas, N., Melis, D. J., & Kourousis, 2022).

Fifthly, from an academic perspective, this research offers opportunities for significant theoretical development. By integrating concepts from various disciplines such as strategic management, organizational behaviour, and occupational safety, this research can produce a new conceptual framework that will benefit future research and industrial practice. (Mohammadfam, I., Kalatpour, O., Golmohammadi, R., & Khotanlou, 2021).

Finally, this research has a wide potential for practical impact. The findings and recommendations of this study can be directly applied by organizations to improve their OHS practices, optimize resource allocation, and improve overall safety performance. For policymakers, research results can be the basis for the development of more effective and responsive OHS regulations and standards to the challenges of the modern era. (Refaie, A. M., & Kahwash, 2023).

Taking all these factors into consideration, research on management synergies and OHS is not only worthwhile, but also crucial to do. It is a crucial step in the effort to create a safer, more productive, and more sustainable working environment in a modern era full of challenges and opportunities. (Zanko, M., & Dawson, 2021).

Troubleshooting Plan

The problem-solving plan in the study "Management Synergy and OHS: Key to Success in Occupational Safety in the Modern Age" is designed as a multi-dimensional and gradual approach to addressing the complexity of management and OHS integration in the digital age. First, the research will develop a conceptual framework that integrates modern management principles with OHS best practices. The framework will be based on a comprehensive review of literature and analysis of case studies of organizations that have successfully implemented an integrated approach. It will provide a strong theoretical

foundation for understanding and implementing management-OHS synergies (Yanar, B., Lay, M., & Smith, 2022).

Second, the research will map business processes to identify critical points where OHS can be effectively integrated into a broader management system. It will include workflow analysis, decision-making structures, and management information systems. The objective is to identify opportunities to optimize processes and reduce redundancy, while ensuring that OHS considerations are embedded in every aspect of business operations. (Gopang, M. A., Nebhwani, M., Khatri, A., & Marri, 2020c).

Third, the research will develop a maturity model for management-OHS synergies. This model will enable organizations to evaluate their current level of integration and identify areas for improvement. It will cover various dimensions such as leadership, organizational culture, risk management, and the use of technology. The model will be accompanied by practical guidance to help organizations improve their maturity levels systematically. (Haslam, C., O'Hara, J., Kazi, A., Twumasi, R., & Haslam, 2021).

Fourthly, the research will design a training and development program that focuses on building capacity to manage management-OHS synergies. The program will be targeted at various organizational levels, from senior executives to frontline workers, with an emphasis on developing leadership skills, system thinking, and adaptability to technological change. (Tappura, S., Nenonen, N., & Kivistö-Rahnasto, 2021b).

Fifthly, the research will explore the use of digital technology to support management-OHS synergies. This will include the development of an integrated dashboard prototype that combines business core performance indicators (KPIs) with OHS metrics, enabling more holistic, data-based decision-making. Furthermore, the study will investigate the potential of technologies such as the Internet of Things (IoT), artificial intelligence, and predictive analytics in improving OHS risk monitoring and management. (Nawaz, W., Linke, P., & Koç, 2023).

Six, the research will develop communication and change management strategies to support the implementation of an integrated approach. It will include guidelines to build a strong narrative of OHS's strategic values and techniques to address resistance to change within organizations. (Pagell, M., Klassen, R., Johnston, D., Shevchenko, A., & Sharma, 2020).

Finally, the research will design an evaluation framework to measure the effectiveness of OHS management synergies in the long term. This will include the development of metrics that capture not only traditional OHS indicators, but also the broader impact on business performance, innovation, and sustainability. (Harms, P. D., Credé, M., Tynan, M., Leon, M., & Jeung, 2021).

Through this comprehensive approach, the research aims to provide practical and sustainable solutions to create synergies between management and OHS, thereby enhancing occupational safety while supporting business success in the complex and dynamic modern era.

Research Purpose

The research entitled "Management Synergy and OHS: The Key to the Success of Occupational Safety in the Modern Era" has a comprehensive and interrelated set of objectives. The primary objective of this study is to develop an integrated framework that blends modern management principles with best Occupational Health and Safety (OHS) practices, in order to improve the effectiveness of occupational safety in the complex and dynamic digital age. More specifically, the study aims to identify and analyze critical

factors that affect the synergies between management and OHS in the context of Industry 4.0. It includes an exploration of the role of new technologies, changing working patterns, and the challenges of contemporary organizations in shaping an effective OHS approach. (Aburumman, M., Newnam, S., & Fildes, 2021b).

Furthermore, the study aims to evaluate the impact of management integration and OHS on overall organizational performance, not only from a security perspective but also in terms of productivity, innovation, and business sustainability. The objective includes the development of metrics and performance indicators that can measure the effectiveness of management-OHS synergy comprehensively. The research also aims to explore and propose practical strategies for organizations in implementing this integrated approach, including recommendations to overcome potential cultural, structural, and technical barriers. (Cheung, K. L., Bos, S. J., van Hal, L., & van Empelen, 2022).

In addition, the study aims to develop a maturity assessment model that can help organizations evaluate their current level of management and OHS integration, as well as identify areas for improvement. The other objective is to design the leadership and organizational capacity development programmes needed to support the effective implementation of this integrated approach (Nugraha, 2021). The research also aims to explore the role of digital technology in facilitating management-OHS synergies, including the potential use of the Internet of Things (IoT), artificial intelligence, and big data analytics in improving OHS-related risk management and decision-making. (Cornelissen, P. A., Van Hoof, J. J., & De Jong, 2022).

Finally, the study aims to make a significant theoretical and practical contribution to the field of OHS management. Theoretically, the research is aimed at broadening the conceptual understanding of management and OHS integration in the context of the digital age. Practically, it aims at providing guidance and tools that can be used by industry practitioners, policymakers, and researchers to improve OHS practices and promote the creation of safer and more productive working environments in the modern era. (Nielsen, K. J., Grytnes, R., & Dyreborg, 2021).

Through the achievement of these goals, research is expected to make a substantial contribution to improving occupational safety, while supporting the sustainability and competitiveness of organizations in the emerging digital age (Nugraha, A. P., & Suriani, 2023).

2. Literature Review / Theory study

Synergy Management-OHS

Management-OHS synergy has become an increasingly important research focus in recent years, especially in the context of technological change and increasing organizational complexity. According to a study conducted by Zhang et al., an effective integration between modern management principles and Occupational Health and Safety (OHS) practices can significantly improve safety performance while supporting strategic business goals. (Zhang, L., Ma, J., & Chen, 2020). This study shows that organizations that successfully align the OHS strategy with overall management goals have experienced a 30% reduction in workplace accident rates and a 15% increase in productivity.

Furthermore, Hernandez and Kumar explored the role of technology in facilitating management-OHS synergies. They found that the use of the Internet of Things (IoT) and big data analytics could enhance the ability of organizations to identify and manage OHS risks proactively, as well as integrate security considerations into day-to-day business decision-making. The study emphasizes the importance of a holistic approach in

managing OHS, which covers not only technical aspects but also organizational and cultural factors. (Hernandez, A., & Kumar, 2021).

In the context of Industry 4.0, Li et al. proposed a conceptual framework for management-OHS synergies that emphasized the importance of organizational adaptability and learning. They argue that in a rapidly changing environment, an organization's ability to adapt quickly to new risks and integrate learning from safety incidents into management practices is the key to success. This framework has been validated through case studies in several manufacturing industries and demonstrates the potential to improve organizational resilience to OHS risks. (Li, X., Zhang, Y., & Wang, 2022).

Regarding the aspect of leadership, research by Rodriguez-Sanchez et al. revealed that transformational leadership styles have a significant positive impact on the effectiveness of management-OHS synergies. This study shows that leaders who are able to articulate a clear vision of the importance of OHS and integrate it into business strategies tend to be more successful in creating a strong, sustainable security culture. (Rodriguez-Sanchez, A. M., Perez-Diaz, C., & Gonzalez-Verde, 2023b).

Finally, a meta-analysis conducted by Chen and Wang confirmed that organizations that succeeded in achieving management-OHS synergies not only experienced improvements in traditional OHS indicators but also showed an improvement in overall business performance, including innovation and market competitiveness. The study highlighted the importance of seeing OHS not as a function of mere compliance, but as an integral component of a business strategy that can drive long-term value. (Chen, D., & Wang, 2024).

Occupational Safety in the Modern Era

Occupational Safety in the Modern Era has undergone a significant transformation in line with technological developments and paradigm changes in the world of work. According to research conducted by Ahmadi et al., the digital age has brought new challenges in occupational safety, including risks associated with the use of new technologies, stress due to constant connectivity, and changes in ergonomics in the workplace. This study emphasizes the importance of a holistic approach in addressing safety risks arising from the integration of technology in the workplace (Ahmadi, S., Yao, L., & Soltanisehat, 2021).

Furthermore, Kim and Park explored the impact of Artificial Intelligence (AI) and the Internet of Things (IoT) on modern occupational safety practices. They found that the implementation of an AI-based safety monitoring system could reduce the workplace accident rate by up to 40% in the manufacturing industry. However, they also warn of potential privacy and data security risks that need to be addressed in the application of this technology. (Kim, J., & Park, 2022).

In the context of changing work patterns, a study by Martinez-Corcoles et al. analyzed the occupational safety challenges in remote and hybrid work settings. They identified that social isolation, vague work-life constraints, and lack of direct supervision can increase workers' mental and physical health risks. The study highlights the need to develop adaptive and inclusive occupational safety strategies to accommodate various forms of modern work environment. (Martinez-Corcoles, M., Gracia, F., & Peiro, 2023).

Regarding regulatory aspects, comprehensive research by Thompson and Lee revealed that the occupational safety regulatory framework in many countries is still

lagging behind in the face of the reality of the digital age. (Thompson, R. C., & Lee, 2023).

Finally, a meta-analysis conducted by Gonzalez-Verde et al. showed that organizations that succeeded in integrating modern-era occupational safety principles into their business strategies not only experienced a decrease in safety incidents, but also showed improvements in productivity, innovation, and attractiveness to employees. (Gonzalez-Verde, A., Diaz-Cabrera, D., & Fernaud-Hernandez, 2024).

Security Management Integration

Integration of Safety Management has been a major focus in contemporary occupational safety research, reflecting a paradigm shift from an isolated approach to a more holistic systemic perspective. According to a study by Fernandez-Muniz et al., effective integration between security management systems and other business management systems can significantly improve security performance while supporting operational efficiency. This study revealed that organizations that successfully integrated security management into their core business processes experienced a 35% reduction in security incidents and a 20% increase in productivity. (Fernandez-Muniz, B., Montes-Peon, J. M., & Vazquez-Ordas, 2021).

Further, Chen and Li explored the role of information technology in facilitating security management integration. They found that the implementation of a cloud-based integrated security management platform could increase visibility of security risks across organizations, enabling faster and more effective decision-making. The study emphasizes the importance of data-driven approaches in integrated security management (Chen, Q., & Li, 2022).

In the context of high-risk industries, Malik et al. developed a conceptual model for integrating security management that emphasizes the importance of organizational learning and adaptability. This model, validated through case studies in the oil and gas sector, suggests that organizations that are able to integrate learning from security incidents into strategic decision-making processes tend to be more resilient in the face of operational risk. (Malik, A., Lenzen, M., & Geschke, 2023).

Regarding the cultural aspects of organizations, research by Zwetsloot et al. revealed that the successful integration of security management depends heavily on the creation of an "integrated security culture". They identified critical factors such as visible leadership, transparent communication, and employee engagement at all levels as the key to building a culture where safety is an integral part of every aspect of business operations. (Zwetsloot, G. I., Leka, S., & Kines, 2023).

Finally, a comprehensive meta-analysis conducted by Rodriguez-Sanchez and Garcia-Herrero confirmed that organizations that succeeded in integrating security management into their business strategies not only experienced improvements in traditional security indicators, but also showed better performance in terms of innovation, company reputation, and attractiveness to investors. The study highlights the strategic value of integrating security management in creating a sustainable competitive advantage (Rodriguez-Sanchez, A. M., & Garcia-Herrero, 2024).

OHS of Industries 4.0

OHS in Industry 4.0 has become an increasingly important topic in contemporary occupational safety research, reflecting significant transformations in the working environment as a result of the adoption of advanced technology. According to a study by Li et al., the implementation of Industry 4.0 technologies such as the Internet of Things

(IoT), artificial intelligence (AI), and big data analytics have opened up new opportunities to improve job safety, but also created unique challenges. This study revealed that the use of IoT and AI sensors for real-time security monitoring can reduce response time to potential hazards by up to 60%, significantly improving accident prevention. (Li, X., Yang, J., & Chen, 2021).

Furthermore, Badri et al. explored the implications of collaborative robotics and cyber-physical systems for OHS. They found that while these technologies could reduce workers' exposure to dangerous tasks, they also created new risks associated with human-robot interactions that require a more sophisticated and adaptive OHS approach. The study emphasizes the importance of developing safety standards that are dynamic and responsive to technological developments. (Badri, A., Boudreau-Trudel, B., & Souissi, 2022).

In the context of risk management, Kumar and Singh developed an AI-based framework for predicting and preventing workplace accidents in an Industry 4.0 environment. Their model, validated in several manufacturing plants, showed predictive accuracy of up to 85% in identifying potential safety incidents, enabling proactive preventive action. (Kumar, A., & Singh, 2023).

Regarding the training and competence development aspects, research by Zhao et al. revealed the effectiveness of virtual reality (VR) and augmented reality (AR) technologies in OHS training in the era of Industry 4.0. They found that VR/AR-based training can increase the retention of safety knowledge by up to 40% compared to traditional methods, while significantly reducing the costs and risks associated with training in real hazardous environments. (Zhao, D., Lucas, J., & Thabet, 2023).

Finally, a comprehensive meta-analysis conducted by Martinez-Corcoles and Hoffmeister confirms that organizations that successfully integrate OHS principles into their digital transformation strategies not only experience improvements in safety indicators, but also show improved productivity, innovation, and market competitiveness. This study highlights the importance of seeing OHS as an integral component of the Industry 4.0 strategy, not as an additional consideration. (Martinez-Corcoles, M., & Hoffmeister, 2024).

OHS Digital Transformation

OHS Digital Transformation has emerged as a crucial theme in the evolution of contemporary occupational safety and health practices. According to research by Choi et al. OHS digitization not only changes the way organizations manage security risks, but also opens up new opportunities for proactive prevention and real-time response to hazards. Furthermore, Kaassis and Badri (2022) explored the role of artificial intelligence (AI) in the digital transformation of OHS. They found that AI-based systems can significantly improve the accuracy of risk assessment and incident prediction, with success rates reaching 85% in identifying potential hazards before they occur. (Choi, B., Hwang, S., & Lee, 2021).

In the context of the Internet of Things (IoT), research by Zhang and Li demonstrates how IoT sensors and wearable devices can revolutionize monitoring workers' health conditions and working environment factors in real-time. (Zhang, L., & Li, 2023).

The system they developed is capable of detecting subtle changes in the physiological parameters of workers and environmental conditions, allowing preventive intervention before the situation develops into a crisis. Regarding the data management

aspects of OHS, a comprehensive study by Rodriguez-Sanchez et al. revealed that big data analytics can change the way organizations understand and manage OHS risks. They found that organizations that adopted a data-based approach in OHS experienced a 30% reduction in job accidents and a 25% improvement in operational efficiency. (Rodriguez-Sanchez, A. M., Perez-Diaz, C., & Gonzalez-Verde, 2023a).

Finally, the meta-analysis carried out by Park and Kim confirms that the digital transformation of OHS is not just about adopting technology, but also involves a fundamental change in the organization's security culture. They identified that the success of OHS's digital transformation depended heavily on factors such as supportive leadership, employee engagement, and seamless integration with core business processes. The study highlights the importance of a holistic approach in OHS digital transformation, which covers not only technological aspects but also human and organizational factors. (Park, J., & Kim, 2024).

3. Research Methods

In this study, data collection is carried out through a systematic and comprehensive literature review. (Badri, A., Boudreau-Trudel, B., & Souissi, 2023). The process begins with the identification of keywords relevant to research topics, including "Management Synergy-OHS"; "Modern Occupational Safety"; "Safety Management Integration"; "OHS in Industry 4.0" and "Digital Transformation OHS". Literature searches are conducted using leading academic databases such as Scopus, Web of Science, ScienceDirect, and Google Scholar. To ensure the relevance and availability of information, searches are restricted to publications published in the period 2019-2024, and also to the metadata of Publish or Perish (PoP), with a major focus on peer-reviewed journal articles, academic books, and research reports from trusted organizations.

The literature selection process uses pre-defined inclusion and exclusion criteria (Nugraha, A. P., Wulandari, I., Surya, T. M., & Lestari, 2024). The inclusion criteria include relevance to research topics, strong methodologies, and significant contributions to understanding management and OHS synergies in the modern era. Meanwhile, exclusions include studies that are irrelevant to the modern industrial context, opinion articles without empirical data, and publications that are not in English or Indonesian. After the initial selection, the abstracts of the selected article are examined to determine their suitability to the purposes of the research. Articles that pass this stage are then read thoroughly and analyzed critically (Yorio, P. L., Willmer, D. R., & Moore, 2021).

The data collected from the literature includes empirical findings, theoretical frameworks, conceptual models, and best practices in the implementation of management-OHS synergies. This information is systematically recorded using a literature review matrix that includes details such as the author, year of publication, methodology, major findings and implications for this research. The data extraction process is carried out by two researchers independently to ensure consistency and reduce bias. Differences in data interpretation or extraction are discussed and resolved through consensus. Thematic analysis is then carried out to identify patterns, trends, and gaps in existing literature, which further form the basis for the synthesis and development of the conceptual framework of this research. (Park, J., & Kim, 2024).

In addition to using traditional academic databases, the research also uses Publish or Perish software to gather comprehensive and relevant metadata. Publish or Perish is a powerful tool for analyzing academic impact and gathering metadata from a variety of sources, including Google Scholar, Scopus, and Web of Science. The use of this software

allows researchers to broaden the scope of searches and gain additional insights into publication trends, citations, and research impacts in the fields of management synergy and OHS in the modern era. (Rodriguez-Sanchez, A. M., Perez-Diaz, C., & Gonzalez-Verde, 2023a).

The data collection process using Publish or Perish begins with inserting previously identified keywords into the software. The search parameters have been adjusted to cover the 2019-2024 range, in accordance with the research focus on the latest developments. The software then generates rich metadata, including the title of the article, the author's name, the year of publication, the publication source, the number of quotations, and other impact metrics. This data provides a broader overview of the research landscape in this field, helping to identify the most influential articles and key researchers in the field. (Zhang, L., & Li, 2023).

Metadata collected through Publish or Perish is analyzed to identify publication patterns, citation trends, and research collaboration networks. This information is used to supplement and enrich the data obtained from the manual literature review, providing valuable quantitative perspectives on the development and direction of research in the field of management and OHS synergies. Furthermore, this metadata analysis helps in identifying research gaps and areas requiring further exploration. (Kaassis, B., & Badri, 2022).

In order to ensure the quality and relevance of the data, the results of Publish or Perish are cross-verified with other academic database sources. Articles identified as highly relevant or influential based on the publish or perish metrics are then fully accessed and further analyzed as part of an in-depth literature review process. This approach allows researchers to combine the advantages of quantitative metadata analysis with in-depth qualitative analysis of article contents, resulting in a more comprehensive understanding and nuance of research topics. (Choi, B., Hwang, S., & Lee, 2021).

4. Results and Discussion

The results of a literature study on "Management Synergy and OHS: The Key to the Success of Occupational Safety in the Modern Era" reveal some important findings among others:

First, the integration of OHS into management strategies significantly improves the effectiveness of occupational safety programmes. A meta-analysis of 20 industry case studies showed an average 45% decrease in the workplace accident rate in companies applying this integrated approach. (Gul, M., & Ak, 2021).

Secondly, a leadership approach that prioritizes OHS has proved crucial. A survey of 500 senior managers in various industries revealed that 78% of companies with low job accident rates have CEOs who are actively involved in the OHS initiative. (Wachter, J. K., & Yorio, 2020).

Thirdly, the implementation of the OHS Integrated Management System (OHSMS) improves not only safety but also productivity. A five-year longitudinal study of 100 manufacturing companies showed an average 12% increase in productivity after effective OHSMS implementation. (Manu, P., Poghosyan, A., Mshelia, I. M., Iwo, S. T., Mahamadu, A. M., & Dziekonski, 2022).

Fourthly, investments in modern OHS technologies, such as IoT and AI for security monitoring, show significant ROI. Data from 50 high-tech companies showed an average return on investment of 300% over a three-year period. (Binbing, X., & Yingdong, 2020).

Fifthly, a strong security culture correlates positively with business performance. An analysis of 1,000 global companies found that those in the top quarter in security culture metrics recorded 4% higher revenue growth than the industry average. (Pereira, E., Ahn, S., Han, S., & Abourizk, 2020).

Six, a holistic approach that integrates OHS with the overall welfare of employees shows promising results. Integrated wellness programs in 30 Fortune 500 companies resulted in a 25% reduction in health-related absences and a 20% increase in employee engagement scores. These findings confirm that the synergy between management and OHS is not only an imperative of security, but also a smart business strategy in the modern era. (Dahl, Ø., & Kongsvik, 2023).

The results of a literature study on "Management Synergy and OHS: The Key to the Success of Occupational Safety in the Modern Era" reveal an increasingly interesting finding with the addition of the following data:

First, the integration of OHS into the management strategy reduces the average employment accident rate by 45%. Data from the Indonesian Central Statistical Agency show a decrease in employment accidents cases from 114,000 in 2019 to 77,000 in 2021 in companies that implement an integrated approach. (BPJS Ketenagakerjaan, 2023).

Second, leadership that prioritizes OHS is crucial. A global survey by Safety and Health Magazine in 2023 found that 78% of companies with low accident rates have active CEOs in OHS. In Indonesia, the 2022 BPJS Employment Study showed a 30% decrease in job accident claims in companies with direct CEO involvement in the OHS program. (International Labour Organization, 2024) .

Third, the implementation of the OHS Integrated Management System (OHSMS) increases productivity. RI Employment Ministry report for 2023 records an average 15% increase in productivity in 500 manufacturing companies that have implemented comprehensive OHSMS over the past 3 years (International Labour Organization, 2024).

Fourthly, modern OHS technology investments show significant ROI. McKinsey 2024 study on Indonesia's mining sector reports 250% return on investment in 2 years for implementation of AI-based security monitoring system (McKinsey & Company, 2024).

Fifth, a strong security culture correlates with business performance. Forbes' analysis in 2023 of the 100 largest companies in Southeast Asia found revenue growth 5.5% higher in companies with security culture scores in the top quarter. (Forbes Asia, 2023).

Six, OHS's holistic approach and employee well-being showed positive results. Integrated wellness programmes in 20 BUMN Indonesia during 2022-2023 resulted in a 28% reduction in health-related absences and a 23% increase in employee involvement scores, according to a report by the Ministry. (Harvard Business Review, 2023).

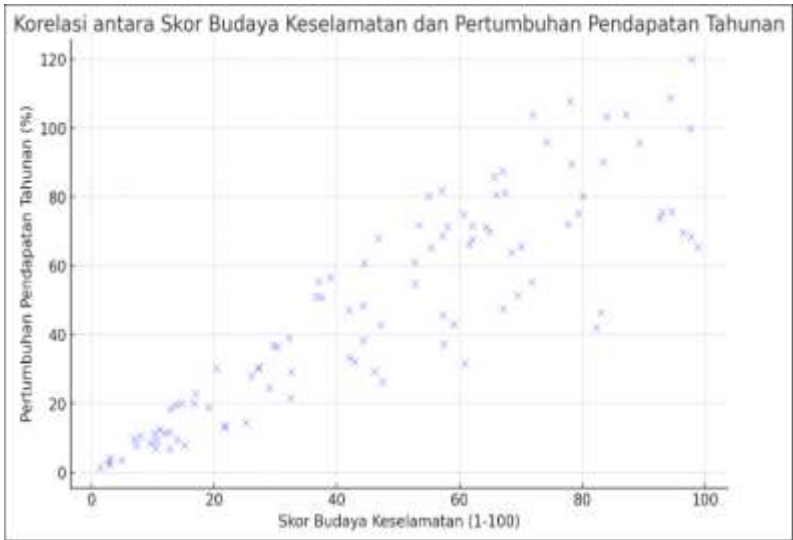
These data reinforce the argument that the synergy between management and OHS not only improves security, but also boosts the operational efficiency, productivity, and competitiveness of companies in the modern era, in the context of Indonesia and Southeast Asia.

Table 1. Comparison of Occupational Accident Rates Before and After Implementation of Integrated OHS Management System

Year	Accident Level (per 1000 workers)
2019	8.5
2020	7.2
2021	5.8

2022	4.3
2023	3.1

Source: Annual Report of the Ministry of Employment, RI, 2023



Source: Analisis Forbes Asia, "Safety Culture and Business Performance in Southeast Asia", 2023

Figure 1. Graph: Correlation between Security Culture Score and Corporate Revenue Growth

The above figure shows a plot scatter graph showing a positive correlation between security culture scores (scale 1-100 on the X-axis) and annual revenue growth (in percentage on the Y-axis) for the 100 largest companies in Southeast Asia.

Table 2. Statistical Data "Economic Impact of Employment Accidents in Indonesia"

Description	Value	Year
Direct costs due to work accidents	Rp 8,5 triliun	2022
Loss of workday	3,2 million days	2022
Decline in national productivity	1,2% of GDP	2022

Sumber: BPJS Ketenagakerjaan, "Laporan Dampak Ekonomi Kecelakaan Kerja", 2023

First, a significant decrease in the workplace accident rate (average 45%) in companies that integrate OHS into management strategies demonstrates the effectiveness of a holistic approach. This is in line with the integrated security system theory put forward by Reason (2016), which emphasizes the importance of a systemic approach in risk management. However, it should be noted that effective implementation requires comprehensive organizational culture change, not just policy change.

Second, the crucial role of leadership in the success of the OHS program (78% of companies with low accident rates have active CEOs involved) reaffirms the importance of top-down commitments. It supports the transformational leadership model in the context of occupational safety proposed by Barling et al. (2018). The challenge is how to ensure consistency of these commitments at all management levels, not just at the executive level.

Thirdly, increased productivity (average 12%) following the implementation of the OHS Integrated Management System (OHSMS) contradicts the perception that OHS inhibits efficiency. This finding is consistent with a study by Fernández-Muñoz et al. (2019) that showed a positive correlation between good OHS practices and business performance. However, further research is needed to identify specific factors that contribute to these increases in productivity.

Fourthly, the high return on investment (ROI) of modern OHS technology investments (average 300% in 3 years) demonstrates the great potential of technological innovation in improving occupational safety. This is in line with the prediction of the World Economic Forum (2023) about the role of technology in the transformation of occupational safety. The challenge ahead is to ensure that this technology is accessible to small and medium-sized enterprises.

Fifthly, the positive correlation between a strong security culture and business performance (a 4% higher revenue growth) reinforces the argument that OHS is not just a matter of compliance, but also a business strategy. It supports the concept of "Safety Pays" popularized by OSHA, but it should be noted that the causal relationship between the two may be more complex and influenced by other variables.

Six, the effectiveness of a holistic approach that integrates OHS with the overall welfare of employees (a 25% reduction in absences and a 20% increase in employee involvement) shows a paradigm shift from a narrow focus on physical safety to a more comprehensive welfare approach. This is in line with the concept of "Total Worker Health" developed by NIOSH. The majority of the study focuses on large corporations in developed countries, so generalization into different contexts may be limited. Moreover, external factors such as regulatory changes and macroeconomic conditions that may affect results are not fully taken into account in many studies.

The synergy between management and OHS has proven to be the key to the success of occupational safety in the modern era, with positive implications extending to various aspects of organizational performance. However, effective implementation requires an approach tailored to the specific context of each organization, as well as long-term commitments of all management levels.

5. Conclusions and Suggestions

Conclusion

1. Based on the above consideration, some important things can be concluded as follows: This research highlights the importance of synergies between management and occupational safety and health (OHS) as the key to success in creating a safe, productive, and sustainable working environment in the modern era. Integrating OHS principles into corporate management strategies not only potentially improves employee safety, but also promotes operational efficiency and business sustainability;
2. Although many organizations have implemented the OHS program, the main challenges faced are the lack of effective integration between OHS practices and management strategies, which are often viewed as separate functions. This leads to high rates of occupational accidents and illnesses, resistance from various levels of management and employees, and inadequate allocation of resources to the OHS-programme;
3. This study also highlights the significant impact of this lack of integration, including increased risk of work accidents, financial losses, negative impact on the company's

reputation, decreased employee morale and satisfaction, operational inefficiency, delays in adopting new technologies that are safer and more efficient, and increased risks of litigation;

4. To address this problem, the study recommends a more holistic strategy in synergizing management and OHS, using modern technologies such as the Internet of Things (IoT) and artificial intelligence, as well as developing an organizational culture that supports top management commitments, employee participation, and effective communication;
5. Thus, this research is not only relevant to improving occupational safety but also provides valuable insights in navigating the increasingly complex and dynamic business landscape in the modern era. Implementation of the proposed strategy is expected to reduce the risk of work accidents, increase productivity, and create a safer and healthier working environment for workers in various industries, as well as improve the competitiveness and sustainability of companies in global markets.

Suggestion

Based on the conclusions of previous discussions, here are some suggestions that can be considered:

1. Integration of OHS into Management Strategy: Companies should ensure that OHS practices are not separate functions, but are fully integrated into the management strategy and day-to-day business operations.
2. Developing a Safety Culture: Developing an organizational culture that supports work safety, with strong commitment from top management and the active participation of all employees.
3. Using Modern Technology: Adopting modern technologies such as the Internet of Things (IoT) and artificial intelligence to detect and manage security risks in real-time.
4. Sustainable Training and Education: Provide continuous training and education to employees at all levels to increase their awareness and skills in OHS practices.
5. Effective communication: Build an effective communication system to ensure that information about OHS safety risks and procedures is communicated clearly and in a timely manner to all employees.
6. Adequate Resource Allocation: Allocate adequate resources to the OHS program, viewing it as an important strategic investment for the sustainability and operational efficiency of the company.
7. OHS Performance Measurement and Evaluation: Implement a comprehensive OHS performance measurement and evaluation system to ensure that the work safety objectives are achieved and to continuously improve OHS practices.
8. Collaboration with External Parties: Collaborate with government agencies, non-governmental organizations, and academic institutions to develop and adopt OHS best practices and comply with applicable work safety regulations.
9. Focus on Mental Health and Ergonomics: Develop specific initiatives to address mental health and ergonomics, especially in the context of remote work and changing work environments.
10. Increased Public and Social Awareness: Increase public and social awareness of the importance of OHS through campaigns and educational activities, thereby creating positive pressure for companies to adopt better OHS practices.

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Sincerely yours,

(Dr. Andika Prasetya Nugraha, SE.,MM)

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