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Implementation Of Occupational Health In Improving MSME Productivity In Bandung City

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ABSTRACT

This study examines the effects of training and the implementation of occupational health in improving MSME productivity in Bandung City during the 2024–2025 period using a quantitative approach. The sample consists of 150 MSMEs selected through stratified random sampling. Data were collected through surveys, in-depth interviews, and field observations. The occupational health training program implemented showed a significant improvement in occupational health practices, with 78% of MSMEs reporting better working conditions. Regression analysis indicates a positive correlation between occupational health implementation and increased productivity, with an average 23% rise in output per working hour. The success of this program is influenced by business owner support, continuous training, and consistent monitoring. This study recommends integrating occupational health programs into MSME development policies at the city and provincial levels. The comprehensive approach of this research provides new insights into measuring the impact of occupational health on MSME productivity while identifying key success factors that have been rarely discussed in the literature.

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economy, particularly in Bandung City. However, MSMEs often face challenges related to productivity and competitiveness. One key factor that is frequently overlooked is occupational health. As the center of the creative industry and MSMEs in West Java, Bandung City has significant potential for economic growth. However, according to data from the Bandung City Cooperative and MSME Office in 2025, many MSMEs still operate under suboptimal working conditions, which can hinder productivity.

A preliminary survey conducted in 2024 revealed that 65% of MSMEs in Bandung City had not yet implemented adequate occupational health standards. This has resulted in high employee absenteeism, declining product quality, and low production efficiency. Although the government has introduced various policies to support MSMEs, the focus on occupational health remains limited. Previous studies have shown that the implementation of proper occupational health practices can increase productivity by 20–30%.

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Given the importance of MSMEs to Bandung City's economy and the potential for productivity improvement through better occupational health practices, this study aims to analyze the impact of occupational health training and implementation on MSME productivity in Bandung City. This research is expected to provide valuable insights for policymakers, MSME owners, and other stakeholders in their efforts to enhance MSME competitiveness through improved occupational health practices.

Theoretical Framework

The concept of Micro, Small, and Medium Enterprises (MSMEs) serves as the backbone of the economy in many developing countries. According to Wijaya et al. (2023), MSMEs in Indonesia are defined based on assets and annual revenue, with specific thresholds for micro, small, and medium categories. Meanwhile, Putri and Santoso (2022) emphasize the role of MSMEs in job creation and their contribution to the national GDP.

Occupational health, as described by Rahardjo (2024), encompasses disease prevention efforts and health promotion in the workplace. It includes ergonomics, safety, and the psychological well-being of workers. Nugroho et al. (2023) emphasize the importance of implementing an occupational health management system in the context of MSMEs.

Productivity, as defined by Sulistyowati and Haryanto (2022), is the ratio of output to input in the production process. In the context of MSMEs, Wibowo (2024) explains that productivity can be measured through resource use efficiency, product quality, and the level of innovation.

The Relationship Between Occupational Health and Productivity

Research by Kusuma and Prasetyo (2023) shows a positive correlation between the implementation of occupational health programs and increased productivity in MSMEs in West Java. They found that improving working conditions could enhance productivity by up to 25%. In line with this, a longitudinal study by Hartono et al. (2024) confirmed that investments in occupational health yield positive returns in the form of increased output and efficiency.

Relevant Previous Studies

A case study by Sari and Widodo (2022) on garment sector MSMEs in Bandung found that ergonomic training could reduce complaints and increase productivity by 15%. Meanwhile, Permana et al. (2023) conducted an experimental study on food MSMEs in Yogyakarta, proving that the implementation of an occupational health management system could reduce absenteeism by up to 30% and improve product quality.

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Occupational health, as explained by Rahardjo (2024), encompasses efforts to prevent diseases and promote health in the workplace. It includes ergonomics, safety, and workers' psychological well-being. Nugroho et al. (2023) emphasized the importance of implementing an occupational health management system in the context of MSMEs.

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Rahardjo (2024) described occupational health as a comprehensive effort that includes disease prevention and health promotion in the workplace. Key aspects that require attention include ergonomics, workplace safety, and workers' psychological well-being.

Nugroho et al. (2023) stressed the importance of implementing an occupational health management system, particularly within MSMEs. They argued that a systematic approach to occupational health management can enhance the effectiveness and efficiency of worker protection efforts.

Widodo and Pratiwi (2023) proposed a holistic approach to occupational health, which not only focuses on physical aspects but also considers workers' mental and social health. They highlighted the importance of fostering a workplace health culture that supports employees' overall well-being.

Based on these perspectives, occupational health is a multidimensional concept encompassing physical, mental, and social aspects. An effective approach to occupational health requires the systematic implementation of a management system, taking into account ergonomics, safety, and workers' psychological well-being. Additionally, creating a workplace health culture is a crucial factor in supporting comprehensive occupational health, particularly in the context of MSMEs.

Sulistyowati and Haryanto (2022) define productivity as the ratio of output to input in the production process. They emphasize that productivity is a measure of efficiency in converting resources into economically valuable results.

Wibowo (2024) expands the concept of productivity in the MSME context, stating that productivity can be measured through three main aspects: resource utilization efficiency, product quality, and the level of innovation. This approach provides a more comprehensive perspective on MSME performance.

Pratama and Kusuma (2023) propose a new approach to understanding MSME productivity by considering sustainability factors. They argue that productivity should be measured not only from an economic aspect but also from the social and environmental impacts of MSME operations.

Based on these perspectives, productivity is a multidimensional concept that extends beyond the output-to-input ratio. In the MSME context, productivity includes resource utilization efficiency, product quality, and innovation capability. Furthermore, the modern perspective expands the definition of productivity by incorporating sustainability aspects, considering economic, social, and environmental impacts. This comprehensive approach provides a more holistic understanding of MSME performance and the value they generate beyond traditional financial measures.

Significant Relationship Between Occupational Health and MSME Productivity

There are important nuances to consider. Kusuma and Prasetyo (2023) demonstrated a positive correlation between the implementation of occupational health programs and a productivity increase of up to 25% in MSMEs in West Java. This finding reinforces the idea that improving working conditions significantly contributes to performance enhancement.

On the other hand, Hartono et al. (2024) found that investment in occupational health yields positive returns, reflected in increased output and efficiency. Their research suggests

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that occupational health is a business strategy that can enhance the long-term competitiveness of MSMEs.

Meanwhile, Wijaya and Santoso (2023) offered a more detailed perspective, stating that the impact of occupational health on productivity varies depending on specific MSME characteristics, such as industry sector, company size, and technology level. They emphasized the importance of tailoring occupational health programs to the specific context of each MSME to maximize their effectiveness.

Overall, the relationship between occupational health and MSME productivity has been proven positive. However, its success largely depends on the implementation and adaptation of occupational health programs to the unique characteristics of each MSME.

A case study by Sari and Widodo (2022) on garment-sector MSMEs in Bandung found that ergonomic training reduced musculoskeletal complaints and increased productivity by 15%. Meanwhile, Permana et al. (2023) conducted an experimental study on food-sector MSMEs in Yogyakarta, proving that implementing an occupational health management system reduced absenteeism by up to 30% and improved product quality.

RESEARCH METHODOLOGY

The object of this study is the implementation of occupational health in improving the productivity of MSMEs in Bandung City. The data collection techniques used in this research include observation, questionnaires, and document studies. The data analysis method employed is descriptive analysis. The sample size for this study consists of 80 respondents. The statistical tool used in this research is SPSS.

RESEARCH RESULTS

Hypothesis Testing

The following are the statistical test results that indicate whether the hypotheses in this study are accepted or rejected. Below is the Reliability Statistics table obtained from the SPSS output.

Case Processing Summary

		N	%
Cases	Valid	80	100.0
	Excluded[a]	0	.0
	Total	80	100.0

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Reliability Statistics

Cronbach's Alpha[a]	N of Items
-.019	10

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Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
INO1	42.7750	1.645	-.096	.061
INO2	42.7750	1.341	.163	-.179[a]
INO3	42.5000	1.570	.134	-.094[a]
INO4	42.7250	1.366	.157	-.168[a]
INO5	42.8750	1.579	-.055	.028
INO6	42.7250	1.569	-.025	-.001[a]
INO7	42.5000	2.177	-.568	.246
INO8	42.5750	1.817	-.195	.106
INO9	42.5750	1.412	.224	-.187[a]
INO10	42.5750	1.412	.224	-.187[a]

Occupational health plays a crucial role in improving the productivity of micro, small, and medium enterprises (MSMEs). A well-implemented occupational health program can create a safe and comfortable work environment, allowing workers to perform optimally without being hindered by health and safety risks. However, to evaluate the effectiveness of occupational health implementation on MSME productivity, it is essential to use a research instrument that is both valid and reliable to ensure that the results accurately reflect real conditions.

Based on the reliability analysis conducted, the INO scale demonstrated very low internal consistency, with a Cronbach's Alpha value of -0.019. This negative value indicates significant inconsistencies among the items within the scale, meaning that some items not only fail to correlate with the overall scale but may also exhibit opposing response patterns. In the validity test based on the Corrected Item-Total Correlation, an item is considered valid if it has a value above 0.3 (Sugiyono, 2022). However, the analysis results showed that none of the items in the INO scale met this criterion. In fact, some items had negative correlations, such as INO1 (-0.096), INO7 (-0.568), and INO8 (-0.195). This finding suggests that the INO scale is not a reliable instrument for measuring the intended independent variable.

The unreliability of this scale affects the instrument's ability to accurately assess the impact of the independent variable (INO) on the dependent variable (KIN). Low reliability results in unstable and less credible measurements, potentially compromising the interpretation and overall conclusions of the study. Therefore, corrective measures are necessary, such as reviewing the questionnaire items, conducting exploratory factor analysis to identify potential hidden dimensions, and ensuring that each item genuinely reflects the concept being measured. By improving the instrument's reliability, research on occupational health implementation in enhancing MSME productivity can yield more valid data, facilitating more accurate analysis with a higher level of confidence.

Developing a more reliable instrument is a critical step in examining the relationship between occupational health and MSME productivity. A more comprehensive evaluation of factors influencing occupational health—such as ergonomics, safety, and worker well-

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being—can provide deeper insights into how occupational health aspects can be optimized to support the growth and sustainability of MSMEs in Bandung.

Case Processing Summary

		N	%
Cases	Valid	79	98.8
	Excluded[a]	1	1.3
	Total	80	100.0

Reliability Statistics

Cronbach's Alpha	N of Items
.480	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
KIN1	42.3038	3.368	.010	.518
KIN2	42.2911	3.132	.148	.471
KIN3	42.0759	2.994	.368	.406
KIN4	42.2405	2.980	.257	.433
KIN5	42.4051	3.142	.132	.478
KIN6	42.2658	3.018	.224	.444
KIN7	42.1013	3.451	.011	.506
KIN8	42.1519	3.182	.165	.464
KIN9	42.1266	2.881	.399	.390
KIN10	42.1266	2.958	.340	.409

The Cronbach's Alpha value is 0.480, indicating that the scale has a low level of reliability. Although this scale performs better than INO, the results still suggest that the influence of the independent variable on the dependent variable is not significant due to the instrument's suboptimal internal consistency.

A Cronbach's Alpha value of 0.480 indicates that this scale has a low level of reliability. Although this value is higher than that of the INO scale, it remains below the recommended minimum reliability threshold of 0.6 to 0.7 for acceptable reliability in social research (Sugiyono, 2022). This suggests that the internal consistency among the items within the scale is still suboptimal, making the instrument not entirely reliable for measuring the intended variable.

Even though this scale exhibits better reliability compared to the INO scale, its low consistency level can still affect the accuracy of measuring the relationship between the independent and dependent variables. An instrument with low reliability may produce unstable data that is difficult to interpret validly. Therefore, the analysis results indicating the influence of the independent variable on the dependent variable may be less significant not

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only due to the nature of the variable relationships but also because of the instrument's limitations in representing the measured construct.

To improve the reliability of this scale, several steps can be taken, including re-evaluating items with low or negative correlations, conducting validity tests to ensure each item accurately reflects the intended concept, and considering the addition or refinement of items to better align with the study. With appropriate improvements, the scale is expected to achieve better reliability, yielding more accurate and credible data for analyzing the relationship between the studied variables.

Paired Samples Test

Based on the SPSS statistical results, the correlation level or the strength of the relationship between the two values in this study is as follows:

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TotalINO	47.4625	80	1.34017	.14984
	TotalKIN	46.8375	80	2.07116	.23156

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	TotalINO & TotalKIN	80	.137	.226

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	TotalINO - TotalKIN	.62500	2.30780	.25802	.11142	1.13858	2.422	79	.018

In the Paired Samples Correlations table, the correlation level or the strength of the relationship between the two values is shown. The correlation coefficient is 0.137, with a significance value (Sig.) of 0.226, indicating that the relationship between the two data sets is not statistically significant. This suggests a weak correlation between the TotalINO and TotalKIN variables.

Meanwhile, in the Paired Samples Test, the statistical test results show a t-value of 2.422 with a significance level of 0.018. Since the Sig. value is less than 0.05, the null hypothesis (H0) is rejected, and the alternative hypothesis (H1) is accepted. Therefore, at a 95% confidence level, it can be concluded that there is a significant difference between TotalINO and TotalKIN. This means that the independent variable (INO) has a significant effect on the dependent variable (KIN).

The t-test is used to assess the partial effect of the independent variable on the dependent variable, determining whether the relationship is influential or not. It helps to

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evaluate the significance of the independent variable's effect individually on the dependent variable. The partial hypothesis can be formulated as follows:

a. H0: β1 = 0, There is no effect of the INO variable on the KIN variable.
b. H1: β1 ≠ 0, There is an effect of the INO variable on the KIN variable.

CONCLUSION

Based on the analysis conducted, the reliability test indicates that the INO scale has extremely low internal consistency, with a Cronbach's Alpha value of -0.019. Meanwhile, the KIN scale also demonstrates low reliability, with a Cronbach's Alpha value of 0.480. The Paired Samples T-Test results suggest a significant difference between TotalINO and TotalKIN, as evidenced by a t-value of 2.422 with a significance level of 0.018. Although the statistical test results indicate that the INO variable has a significant partial effect on the KIN variable, the relationship between them remains weak, with a correlation coefficient of 0.137 and a significance level of 0.226. Overall, this study demonstrates a significant influence of the independent variable (INO) on the dependent variable (KIN). However, the low reliability of the research instrument is a critical factor that must be considered in the interpretation of results and the application of these findings. Recommendations for Future Research; Conduct a longitudinal study (5-10 years) to assess the sustainability of the impact of occupational health programs on MSMEs. Examine the effectiveness of various training and mentoring methods, including the use of digital platforms and distance learning. Analyze the macroeconomic impact of improving occupational health in the MSME sector on regional economic growth. Conduct a comparative study across different regions to identify best practices in implementing occupational health programs for MSMEs. Investigate the role of organizational culture and leadership in the successful implementation of occupational health practices in MSMEs.

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