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Research paper

Factors Affecting The Welfare of Workers in Micro and Small Enterprises (MSEs) to Achieve Sustainable Living in Palembang City

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Abstract

This study aims to identify and analyze the factors that influence the welfare of workers in Micro and Small Enterprises (MSEs) in Palembang City within the framework of sustainable livelihoods. The approach used is a quantitative approach using the survey method. The population in this study is all MSE workers in Palembang City, and the sampling technique is carried out using a proportionate stratified random sampling method by considering the representation of various business sectors and administrative areas. The number of respondents analyzed was 396 people. Data were collected through questionnaires that had been tested for validity and reliability. The analytical technique used was multiple linear regression to examine the influence of the five independent variables of human capital, social capital, natural capital, physical capital, and financial capital on the dependent variable of worker welfare. In addition, a t-test was conducted to see the partial effect, an F-test for simultaneous effect, and a coefficient of determination analysis to measure the strength of the model.
The results show that the five types of capital have a positive and significant influence on workers' welfare partially and simultaneously. Human capital, such as education, skills, and health, is the main determinant in improving individual capacity. Social capital through networks and collective trust strengthens community ties and workers' sense of security. Natural and physical capital play a role in providing a comfortable and productive work environment, while financial capital is a crucial aspect in ensuring workers' economic stability. The coefficient of determination shows that the model can explain part of the variation in workers' welfare, but there are still other factors outside the model that need further investigation. Therefore, this study recommends the development of further studies by including other variables such as psychological capital, regulatory support, and qualitative approaches to enrich a holistic understanding of MSE workers' welfare in a dynamic local context.

Keywords: *worker welfare, micro and small enterprises, human, social, natural, physical, financial capital, sustainable livelihood, Palembang City.*

1. Introduction

Sustainable development is a global agenda that emphasizes the importance of balance between economic growth, environmental protection, and improvement of people's social welfare. In this context, micro and small enterprises (MSEs) play a strategic role, especially in developing countries such as Indonesia, including Palembang City. MSEs not only contribute to local and national economic growth, but also become the backbone in employing the lower-middle-income community. Therefore, improving the welfare of MSE workers is a key element in efforts to achieve sustainable livelihoods in urban areas.
The welfare of workers is not only determined by the amount of wages, but also by various other factors such as working conditions, social protection, access to health and education services, and job stability. From a sustainable development perspective, workers' welfare is also closely related to their ability to access the resources necessary to meet basic needs, face risks, and participate in economic activities productively and with dignity. Amidst complex employment challenges and socio-economic changes.
Micro and Small Enterprises (MSEs) are expected to be a strategic solution in creating jobs and reducing poverty, especially in urban areas such as Palembang City. The existence of MSEs can absorb a large number of workers and plays an important role in building a populist economy. However, the poverty rate in Palembang City increased in 2021 by 11.3 percent, from 182,610 people in 2020 to 194,120 people in 2021, before decreasing again to 181,650 people in 2022. This shows that the growth of MSEs has not been able to fully answer the challenges of community welfare sustainably (Badan Pusat Statistik Kota Palembang, 2025).
According to Statistics Indonesia (2025), poverty is measured using the concept of the basic needs approach, which reflects the economic inability to fulfill food and non-food needs. In this context, the welfare of MSE workers is influenced by five forms of capital assets, namely human capital, social capital, natural capital, physical capital, and financial capital. Welfare is also determined by vulnerability context factors such as economic shocks, price changes, digital competition, and natural conditions that affect business stability. Based on data from the Palembang City Cooperatives and SMEs Office in 2022, there were 40,128 MSE units spread across 18 sub-districts, with the highest number in Ilir Timur I (5,350 units), Sukarami (4,558 units), and Ilir Timur II (3,396 units). In terms of employment, as many as

19,205 workers (12,543 men and 6,662 women) are recorded as business actors assisted by permanent workers, i.e., MSE workers who are economically at risk but are the backbone of business productivity (Statistics Indonesia Palembang City, 2025).

In terms of the quality of human resources, out of a total of 782,729 workers in Palembang City in 2022, 328,319 people have a high school education, and 191,676 have a university education, while the rest are still below that level. This shows that the educational qualifications of MSE workers are still limited, which has the potential to hinder economic mobility and adaptation to technological change (Palembang City Statistics Agency, 2025). From a macro welfare perspective, the Gross Regional Domestic Product (GRDP) of Palembang City continues to increase, from Rp141.9 trillion in 2018 to Rp179.2 trillion in 2022. However, income inequality remains an important issue, as seen in the community welfare index and Human Development Index (HDI) data, which increased from 76.02 (2014) to 78.72 (2022). Despite this positive trend, inequality in welfare is still evident, especially among informal workers and the MSE sector (Central Bureau of Statistics of Palembang City, 2025).

These conditions show that the role of MSEs in sustainable development needs to be studied more deeply, especially in terms of their contribution to improving workers' welfare. This is important so that MSEs are not only economic drivers, but also the main pillars in realizing sustainable living at the household and community levels. Therefore, this research will analyze the factors that influence the welfare of MSE workers in Palembang City using a sustainable livelihood approach to formulate strategies that are more inclusive and responsive to local challenges.

The concept of sustainable livelihood has become an important foundation in analyzing community economic sustainability strategies, especially for vulnerable groups such as MSE workers. According to DFID (1999), there are five main capital assets, namely human capital, social capital, natural capital, physical capital, and financial capital, which contribute to sustainable livelihood. This framework is widely used to understand community resilience to economic, social, and environmental pressures.

Kabir et al. (2012) examined the impact of small entrepreneurship on the livelihood assets of poor women in rural Bangladesh and found that these activities were able to increase income, skills, and social support. Similar findings were also revealed by Hendratmi et al. (2022), who stated that the livelihood strategies of women MSEs in Indonesia are influenced by a combination of human capital (education and experience), social capital (networks and communities), and policy support from the government.

The LPEM UI report (2020) shows that the COVID-19 pandemic has had a major impact on the MSME sector, especially in the aspects of financing, distribution, and sales. This is reinforced by S. Eko (2021), who noted an increase in the number of MSMEs experiencing a capital crisis. Reardon et al. (2020) highlighted that supply chain disruptions due to the pandemic and dependence on the informal sector worsened the economic conditions of MSE workers' households (Shafi et al., 2020; Takeda et al., 2022; Gupta et al., 2023).

On the issue of gender equality, Rashmi (2016) and Ogundana et al. (2021) emphasize that women entrepreneurs have a major contribution to the family economy, but are often constrained by limited access to capital, technology, and social recognition. In Indonesia, the Ministry of Cooperatives and SMEs (2021) noted that 64.5% of MSME players are women, who rely on time flexibility and multiple roles in the household as key social capital.

Access to finance is a major challenge in MSE development. Bongomin et al. (2017) revealed that financial literacy and limited access to credit cause the slow growth of MSEs in developing countries. On the other hand, Pathak and Reddy (2018) and Rahabhi et al. (2021) emphasize the importance of income diversification and utilization of local potential (such as tourism and agribusiness) as part of a resilient and sustainable livelihood strategy.

In crises, Krishnan et al. (2022) stated that adaptive entrepreneurship-based interventions are essential to support the survival of MSEs. Digitalization, networking, and innovation are the main factors that determine the success of MSE actors in facing economic pressures.

Hendratmi and Sukmaningrum (2018) showed that support from the government through training, incubators, and entrepreneurial organizations greatly influenced the success of women's businesses. In Kenya, Okeyo et al. (2014) proved that business development services can improve the performance and entrepreneurial orientation of MSEs.

In terms of human capital, Todaro and Smith (2011) assert that education is a long-term investment that can improve the quality of labor and economic productivity. Feriyanto (1996) adds that formal and informal education are a form of human capital investment that has an impact on increasing income and welfare. Further study by Krishnan et al. (2018) states that the relationship between human capital and social networks can strengthen the socioeconomic structure of individuals, especially in an unstable economic context.

Based on the theoretical studies and empirical research that have been presented, each type of capital, human, social, natural, physical, and financial, contributes significantly to improving the welfare of workers, especially in the context of MSEs that play an important role in the economic structure of Palembang City. The Sustainable Livelihood Framework, the Labor Supply theory, and the Life Cycle Income theory provide a strong theoretical basis for understanding the relationship between these five capitals and the sustainable welfare of workers. In this context, empirical testing of the following five hypotheses will provide a more comprehensive understanding of the determinants of the welfare of MSE workers in Palembang City

Human capital is an important asset in improving workers' welfare. Human capital includes the education, skills, knowledge, and experience that workers gain through formal education, training, and work experience. The Human Capital Theory, developed by Becker (1964), states that investment in education and training increases the productivity of individuals, which in turn enables them to earn higher wages and enjoy better welfare. In the context of worker welfare, increased human capital enables workers to be more productive and efficient in their work. Workers with higher levels of education tend to have skills that are more relevant to labor market needs, which makes them more valuable to employers. This provides greater bargaining power in wage negotiations and access to jobs with more secure and stable working conditions (Schultz, 1961).

The Labor Supply Theory is also relevant, which states that an increase in human capital increases the supply of high-quality labor. Educated workers may demand higher wages due to their significant contribution to firm productivity (Mincer, 1974). Research by Hanushek & Woessmann (2020) and Heckman et al. (2018) shows that improving the quality of education is closely related to increasing workers' productivity, income, and long-term welfare.

H1: Human capital has a positive and significant effect on workers' welfare.

Social capital includes networks, norms, and trust that enable cooperation within a community or organization. Sustainable living capital theory emphasizes that social capital builds the sustainability of life and supports individual well-being. Strong social capital provides better access to resources, information, and support needed to improve workers' well-being (Pretty, 2019).

In Labor Supply theory, workers with strong social networks have better access to employment and training opportunities, improving skills and bargaining power in the labor market (Granovetter, 1973). Life Cycle Income theory also positions social capital as an income stabilizing factor throughout a worker's life cycle, providing support when facing job transitions or retirement (Modigliani, 1954). Research by Putnam (2020) and Rijswijk et al. (2021) confirms that involvement in social networks strengthens community ties, reduces stress, and increases access to economic resources, ultimately contributing to workers' well-being.

H2: Social capital has a positive and significant effect on worker welfare.

The Effect of Natural Capital on Workers' Well-being. In Sustainable Living capital theory, natural capital, such as forests, water, and land, is critical to workers' long-term well-being. A healthy environment improves work safety and quality of life. In Labor Supply theory, good natural capital increases worker productivity, such as in agriculture or forestry, enabling more stable and higher earnings (Zhang et al., 2020). In the Life Cycle Income framework, natural capital plays a role in maintaining income stability throughout working life. Farmers with access to fertile soil and clean water have better crop yields and resilience to climate risks (Waters et al., 2011).
Research by Smith et al. (2021), Johnson & Liu (2020), and Brown et al. (2019) shows that good natural resource management improves workers' income, health, and working conditions, while environmental degradation decreases productivity and well-being.
H3: Natural capital has a positive and significant effect on worker welfare.
Physical capital includes infrastructure, machinery, and work equipment. In the capital theory of Sustainable Living, physical capital supports efficiency, work safety, and sustainability of production (Garcia & Martinez, 2021). Adequate infrastructure and technology improve work comfort and productivity. According to the Labor Supply theory, firms with good physical capital attract qualified labor. A modern and efficient work environment increases workers' competitiveness and enables them to earn higher wages. In the Life Cycle Income framework, physical capital supports stable income and extends the productive life of workers (Davis & Brown, 2019). Research by Garcia & Martinez (2021), Johnson & Smith (2020), and Davis & Brown (2019) shows that good physical capital reduces work accidents, increases efficiency, and provides long-term income stability
H4: Physical capital has a positive and significant effect on workers' welfare
Financial capital includes savings, access to credit, and income. Sustainable Living Theory emphasizes the importance of financial capital to improve the quality of life through access to education, health, and decent housing. Financial capital also helps workers deal with economic risk and uncertainty (Williams & Taylor, 2021). In the Labor Supply theory, workers with good financial capital have greater flexibility in finding better jobs and investing in job skills. Life Cycle Income theory places financial capital as an important buffer when income declines, such as during retirement or job loss (Davis & Brown, 2019). Research by Williams & Taylor (2021), Johnson & Smith (2020), and Davis & Brown (2019) shows that access to savings, credit, and investments increases workers' economic resilience and promotes long-term well-being.
H5: Financial capital has a positive and significant effect on occupational well-being

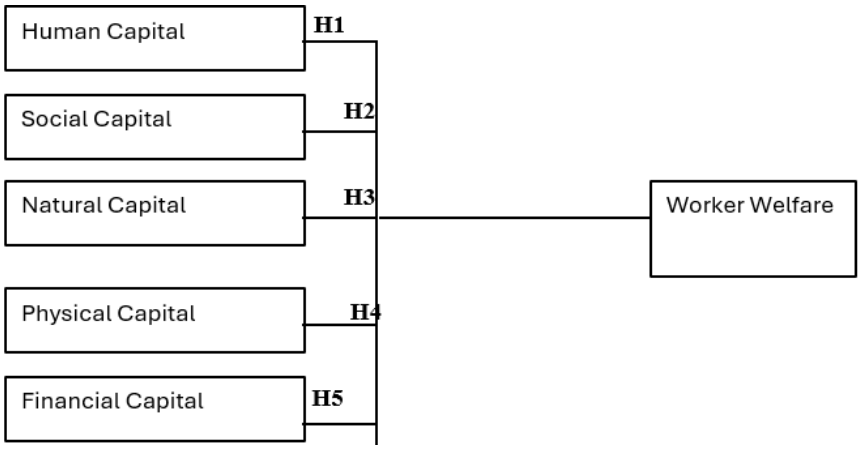

Fig.1: Conceptual Model

Figure 1 illustrates the conceptual framework of this study, which links the five forms of capital—human, social, natural, physical, and financial capital—to the welfare of MSE workers in Palembang City. Each form of capital is hypothesized (H1–H5) to have a direct positive effect on worker welfare. The model reflects the application of the Sustainable Livelihood Framework, emphasizing that improvements in education, health, networks, environmental conditions, infrastructure, and financial resources collectively contribute to more sustainable well-being. By visualizing these relationships, the figure clarifies how the independent variables interact with the dependent variable and guides the empirical testing through regression analysis.

2. Research Methodology

This research uses a quantitative approach with a survey design, aiming to analyze the factors that influence the welfare of workers in Micro and Small Enterprises (MSEs) to achieve a sustainable life in Palembang City. The independent variables in this study consist of five types of capital: human capital, social capital, physical capital, natural capital, and financial capital. Meanwhile, worker welfare is the dependent variable that reflects aspects of income, health, access to education, and economic stability. The data used is primary data obtained directly through distributing questionnaires to MSE workers in Palembang City. The questionnaire instrument was designed in the form of closed and open questions with a Likert scale of 1 to 5, where a score of 1 indicates "strongly disagree" and a score of 5 indicates "strongly agree." To strengthen the analysis, secondary data from scientific literature, books, journals, and statistical reports were also used. The population in this study is all MSE units in Palembang City, which amounted to 40,140 units, consisting of 12,665 micro businesses and 27,475 small businesses. The sample was determined using the Krejcie and Morgan formula with an error rate of 5% and a confidence level of 95%, so the sample size was set at 396 business units. The sampling technique used was proportionate stratified random sampling to ensure proportional representation between micro and small businesses, amounting to 125 and 271 units, respectively. Data collection was conducted through direct observation and the distribution of questionnaires to selected respondents. Each variable is measured based on specific indicators: human capital is measured through education, training, and productivity; social capital through social participation, networks, and community support; physical capital through work facilities and technology; natural capital through sustainability of the work environment; and financial capital through income and access to finance. Workers' welfare as the dependent variable is measured in terms of household income, consumption, living conditions, and ease of access to health, education, and transportation facilities. Data analysis was conducted using two approaches: descriptive statistics and multiple linear regression. Descriptive statistics were used to describe the characteristics of respondents as well as the distribution of each variable, through frequency, percentage, mean, median,

and standard deviation measures. Meanwhile, multiple regression was used to test the simultaneous and partial effects of each independent variable on worker welfare. The regression model used is as follows

$$TKP_i = \beta 0 + \beta 1\ MMi_i + \beta 2\ MSi_i + \beta 3\ MA_i + \beta 4\ MFIS_i + \beta 5\ MFIN_i + \epsilon_i \quad (1)$$

Where:
TKPi = Worker Welfare Level
β0 = Intercept
β1 MMi = Regression coefficient for Human Capital
β2 MSi = Regression coefficient for Social Capital
β3 MAi = Regression coefficient for Natural Capital
β4 MFISi = Regression coefficient for Physical Capital
β5 MFINi = Regression coefficient for Financial Capital
e = Error
i = Individual

Before regression testing, the model is first tested against classical assumptions to ensure the validity and reliability of the results. The classical assumption tests used include the normality test (using the Jarque-Bera test), the multicollinearity test (through partial correlation between variables), the autocorrelation test (with the LM Test), and the heteroscedasticity test (using White Test). If the model meets the BLUE (Best Linear Unbiased Estimator) requirements, then the regression can be continued. Next, an F-statistic test was conducted to test the joint influence of all independent variables on worker welfare, as well as a t-test to test the influence of each independent variable partially. Significance was determined at the $\alpha = 0.05$ level. The coefficient of determination (Adjusted R^2) is used to measure how large a proportion of the variation in worker welfare can be explained by the independent variables used in the model. The operational definitions of the variables were systematically arranged in a table containing the variable names, dimensions, indicators, and measurement scales. Each indicator is designed to match the reality in the field and is easily understood by respondents.

Table 1: Operational Definition of Variables

No	Research Variable	Dimensions	Indicators	Scale
1	Human Capital	Education, Health, Skills	Education level Health of workers Training and skills	Ordinal
2	Social Capital	Network, Support, Trust	Work network Trust between workers Community participation	Ordinal
3	Physical Capital	Infrastructure, Technology	Infrastructure availability Access to technology Work facilities	Ordinal
4	Financial Capital	Wages, Credit, Savings	Wages of workers Access to credit Worker savings	Ordinal
5	Natural Capital	Environment, green space	Air quality Green space Waste management	Ordinal
6	Worker Welfare	Income, Satisfaction, Productivity	Income Job satisfaction Productivity	Ordinal

3. Results and Discussion

Descriptive statistics in this study aim to provide an overview of the characteristics of Micro and Small Enterprises (MSEs) in Palembang City who became research respondents. With a total of 396 respondents, the data collected includes demographic and socioeconomic aspects such as age, gender, religion, education level, marital status, number of dependents, type of business, monthly income, and length of business. This information provides an initial foundation for understanding the welfare context and livelihood strategies undertaken by MSE actors in the region.

Table 2: Descriptive Statistics

Variable	Category	Frequency	Percentage (%)
Age	<25 years old	75	18.9
	25-34 years old	100	25.3
	35-44 years old	90	22.7
	45-54 years	80	20.2
	55+ years	51	12.9
Gender	Male	188	47.5
	Female	208	52.5
Religion	Islam	280	70.7
	Christianity	70	17.7
	Others	46	11.6
Education	Elementary	40	10.1
	Junior High School	60	15.2
	SMA/SMK	150	37.9
	D3	50	12.6
	S1	70	17.7
	S2	26	6.6
Marital Status	Unmarried	100	25.3
	Married	260	65.7
	Divorced/Died	36	9

Number of Dependents	0-1 person	90	22.7
	2-3 people	190	48
	4-5 people	80	20.2
	>5 people	36	9.1
Type of Business	Culinary	130	32.8
	Fashion	75	18.9
	Services	90	22.7
	Crafts	45	11.4
	Urban Agriculture	26	6.6
	Other	30	7.6
Monthly Income (IDR)	≤ 2.5 million	110	27.8
	> 2.5 - 3 million	80	20.2
	> 3 - 4 million	70	17.7
	> 4 - 5 million	60	15.2
	> 5 million	76	19.2
Length of business	< 1 year	65	16.4
	1 - <3 years	110	27.8
	3 - <5 years	95	24
	≥ 5 years	126	31.8

Source: processed data, 202

Based on Table 2, it can be concluded that MSEs in Palembang City are dominated by individuals who are at a productive age, especially the age group of 25-34 years, which reflects the great potential of the younger generation in the entrepreneurship sector. The slightly higher proportion of female business owners compared to men indicates that women play an important role in local economic development, in line with the increasing trend of women's economic empowerment. In terms of education, most respondents are high school/vocational school graduates, indicating that MSEs generally have a secondary education background. However, the presence of respondents with higher education is significant, reflecting the opportunity for knowledge-based business capacity building. Most respondents are married and have 2-3 family dependents, indicating that their business activities are not only self-oriented, but also support the family economy. The most common types of businesses are culinary, services, and fashion, indicating that the MSE sector in Palembang is highly oriented towards the consumptive needs of urban communities. In terms of income, most MSEs earn more than IDR 2,500,000, but there is still a group that is in the economically vulnerable category. The length of business that has been run is mostly in the range of 1-5 years and ≥5 years, reflecting good business sustainability and resilience, although novice business actors still need assistance to achieve stability. To ensure the feasibility and reliability of the research instruments and the suitability of the regression model used, a series of statistical tests has been carried out, including validity, reliability, and classical assumption tests. The validity test is used to measure the extent to which each instrument item can represent the construct being measured, while the reliability test aims to test the internal consistency of the instrument. In addition, the classical assumption test, consisting of normality, multicollinearity, autocorrelation, and heteroscedasticity tests, was also carried out to test the suitability of the regression model used in this study. The recapitulation results of all these tests can be seen in Table 3.

Table 3: Recapitulation of Validity, Reliability, and Classical Assumption Test Results

Test Type	Indicator / Statistic	Results	Criteria	Conclusion
Validity Test	Item correlation coefficient	0,11 - 0,91	r > 0,099	All items are valid
Reliability Test	Cronbach's Alpha	0,77	> 0,60	Reliable / Consistent
Normality Test	Asymp. Sig. (Kolmogorov-Smirnov Test)	0,058	> 0,05	Data is normally distributed
Multicollinearity Test	Tolerance	0,689 - 0,944	> 0,10	No multicollinearity
	VIF	1,059 - 1,452	< 10	No multicollinearity
Autocorrelation Test	Durbin-Watson	1,831	1.5 < DW < 2.5	There is no autocorrelation
Heteroscedasticity Test	Scatterplot	The dots are randomly scattered without a specific pattern	Does not form a systematic pattern	There is no heteroscedasticity

Source: Processed Data, 2025

Based on the validity test results, all research instrument items are declared valid because they have a correlation coefficient (r) value greater than the r-table (0.099). This shows that each indicator can accurately measure the intended construct. Furthermore, the reliability test with a Cronbach's Alpha value of 0.77 indicates that the instrument has good internal consistency and is reliable.

In testing the regression model, all classical assumptions have been met. The normality test shows that the residual data is normally distributed (Asymp. Sig = 0.058 > 0.05). The multicollinearity test proves that there is no strong correlation between independent variables (VIF < 10 and Tolerance > 0.1). The autocorrelation test with a Durbin-Watson value of 1.831 indicates that the residuals are independent. Finally, the scatterplot results in the heteroscedasticity test show a random pattern of residual distribution, indicating that there is no heteroscedasticity problem. Thus, the research instruments proved to be valid and reliable, and the regression model has met all the basic assumption requirements. This provides a strong basis for continuing further regression analysis to examine the influence of the five capitals (human, social, natural, physical, and financial capital) on the welfare of MSE workers quantitatively. To determine the influence of each type of capital on the Welfare Level of Workers (TKP) at MSE actors in Palembang City, multiple linear regression analysis is carried out, which includes a partial test (t-test), a simultaneous test (F test), and measurement of the coefficient of determination (R^2). The t-test is used to test the effect of each independent variable partially, while the F-test is used to see the effect of all independent variables simultaneously on the dependent variable. Meanwhile, the coefficient of determination is used to measure how much the proportion of variation in the crime scene can be explained by the five capital variables. A recapitulation of the overall test results is shown in Table 3 below.

Table 4: Recapitulation of the Results of the t Test, F Test, and Coefficient of Determination

Type of Test	Variable/Statistic	Value	Significance / Criteria	Conclusion
T test	Human Capital (MM)	t = 3.243	Sig. = 0.001 < 0.05	Significant, positive effect on TKP
	Social Capital (MS)	t = 2.315	Sig. = 0.021 < 0.05	Significant, positive effect on TKP
	Natural Capital (MA)	t = 2.643	Sig. = 0.009 < 0.05	Significant, positive effect on TKP

	Physical Capital (MFIS)	t = 2.217	Sig. = 0.027 < 0.05	Significant, positive effect on TKP
	Financial Capital (MFIN)	t = 3.333	Sig. = 0.001 < 0.05	Significant, positive effect on TKP
F test	All independent variables	F = 2.697	Sig. = 0.021 < 0.05	Simultaneously significant to TKP
Coefficient of Determination	R	0.51	Moderate positive correlation	Positive relationship between independent variables and the crime scene
	R^2	0.26	26% of the variation in crime scenes explained	The model explains 26% of the dependent variable
	Adjusted R^2	0.245	Correction for the number of variables	After correction, 24.5% of the variation in the crime scene is explained

Source: Processed data, 2025

Based on the recapitulation results in Table 4.17, all independent variables of Human Capital, Social Capital, Natural Capital, Physical Capital, and Financial Capital have a positive and significant effect on the Welfare Level of Workers. This is indicated by a significance value that is smaller than 0.05 in each t-test. Simultaneously, the five capitals also have a significant influence on worker welfare, as shown by the results of the F test with a significance value of 0.021.

The coefficient of determination (R^2) of 0.260 indicates that the model can explain 26% of the variation in worker welfare, while the rest is explained by other variables outside this model. The Adjusted R^2 value of 0.245 confirms that the model remains quite good despite having more than one independent variable. Thus, these results indicate that the five forms of capital contribute significantly to improving the welfare of MSE workers, and are important to pay attention to in the formulation of sustainable MSE development policies. The results of the regression analysis are presented in the following Multiple Linear Regression Results Table:

Table 5: Multiple Regression Analysis

Variable	B (Unstd.)	Std. Error	Beta (Std.)	t	Sig.
(Constant)	60.867	5.201	-	11.704	0
MM	0.12	0.037	0.162	3.243	0.001
MS	0.098	0.065	0.121	2.315	0.021
MA	0.145	0.07	0.134	2.643	0.009
MFIS	0.102	0.046	0.122	2.217	0.027
MFIN	0.11	0.033	0.172	3.333	0.001

Source: Data processed, 2025

Multiple regression analysis is explained as follows:

1. Constant (Intercept)

The constant value of 60,867 indicates that if all independent variables in the model (Human Capital, Social Capital, Natural Capital, Physical Capital, and Financial Capital) are considered to have not contributed or are zero, then the Worker Welfare Level (TKP) remains at a base level of 60,867. This value reflects the existing welfare baseline without the influence of the explanatory variables in the model.

2. Human Capital (MM)

The Human Capital regression coefficient of 0.120 with a significance value of 0.001 indicates that each one-unit increase in the human capital indicator will increase worker welfare by 0.120 units, assuming other variables are constant. This indicates that workers' education, training, and physical and mental health contribute significantly to their welfare, especially in the context of productivity, security, and career development in MSEs.

3. Social Capital (MS)

The regression coefficient of 0.098 with a significance value of 0.021 indicates that Social Capital has a positive and significant influence on TKP. This means that improving social relations between workers, mutual trust, and participation in community activities facilitated by MSEs can encourage the improvement of workers' welfare. A socially supportive work environment creates a sense of comfort and attachment that has an impact on the quality of work life.

4. Natural Capital (MA)

The regression results show that the Natural Capital coefficient is 0.145 with a significance level of 0.009, meaning that a healthy and sustainable work environment contributes positively to workers' welfare. A work environment that has good air quality, green spaces, and good waste management not only creates physical comfort but also supports the long-term health of workers, which in turn affects their job satisfaction.

5. Physical Capital (MFIS)

The Physical Capital regression coefficient of 0.102 and a significance value of 0.027 indicate that the availability of adequate work infrastructure, proper work equipment, and work safety facilities has a significant influence on workers' well-being. Adequate facilities and infrastructure increase work efficiency, reduce work risks, and foster a sense of security in carrying out daily tasks.

6. Financial Capital (MFIN)

Financial Capital has a regression coefficient of 0.110 and a significance value of 0.001, which means that this variable has the statistically strongest positive influence on TKP compared to the other variables in the model. This suggests that a decent income, easy access to credit, and the ability to save regularly are important factors that strongly influence workers' economic stability and well-being. When basic financial needs are met, workers tend to feel more secure and motivated in carrying out their roles in the MSE environment.

3.1 The Effect of Human Capital on Workers' Welfare

Human capital is proven to have a positive and significant influence on workers' welfare based on the results of the regression analysis. The regression coefficient of 0.120 and a significance value of 0.001 indicate that any increase in the quality of human capital directly impacts improving workers' welfare. This finding is in line with the Human Capital theory developed by Becker (1964), which asserts that education and training are forms of investment that increase the productivity of individuals, thus enabling them to earn higher incomes and a better quality of life. Formal education provides a foundation of knowledge and skills that are important in the world of work. Workers with higher levels of education tend to have access to more stable and better-paid jobs. In addition, continuous on-the-job training allows workers to continuously develop their competencies and adapt to technological developments and market needs. This not only improves workers' competitiveness in the job market but also creates greater opportunities for career mobility and income generation.

In the context of the field, MSE workers with strong human capital are better able to complete tasks effectively and efficiently. They are also better prepared to deal with changes, both in terms of technology and company policies. Good levels of physical and mental health, as part of human capital, enable workers to work consistently without much interruption. This, in turn, contributes to increased productivity and overall well-being.

Research by Hanushek & Woessmann (2020) and Heckman et al. (2018) shows that the quality of education and skills are strongly related to individual productivity and income. A good education opens access to quality jobs and provides provisions to deal with occupational risks. In the long run, this not only improves individual well-being but also contributes to economic growth and the sustainable well-being of the working community.

Thus, investment in human capital should not be viewed as a burden, but rather as a long-term strategy to create sustainable prosperity. The results of this study confirm that the development of workers' education, training, and health should be prioritized in HRM strategies, especially in the context of micro and small enterprises that rely heavily on the quality of their workforce to maintain their performance and business stability.

3.2 The Effect of Social Capital on Worker Well-being

Social capital also shows a positive and significant influence on worker welfare. The results of the regression analysis show that this variable has a coefficient of 0.098 and a significance value of 0.021, which means that the stronger the social network, trust between workers, and participation in the work community, the welfare of workers will also increase. This finding is in line with the Sustainable Livelihoods theory, which emphasizes the importance of social capital in supporting survival and welfare quality.

Social capital allows workers to build strong interpersonal relationships within the work environment, creating a sense of security, solidarity, and mutual support in completing tasks. An extensive work network not only provides access to information and job opportunities but also supports career growth and higher work motivation. The norm of trust built in the work environment creates a conducive work climate, minimizes conflict, and increases the effectiveness of collaboration between teams.

In the context of the labor market, workers with strong social networks also have greater access to information on training, new job opportunities, and sector developments. This increases their bargaining power in the labor market and provides the flexibility to transition between jobs without losing economic stability. Participation in social communities, such as worker cooperatives or corporate social activities, also builds emotional engagement that impacts workers' psychological well-being.

Based on Life Cycle Income theory, social capital plays an important role in maintaining income stability throughout a worker's life cycle. When workers experience transitions, such as layoffs or retirement, social networks can provide alternative support, both financial and non-financial. Putnam (2020) and Rijswijk et al. (2021) proved that active engagement in social networks can reduce stress levels and improve work-life balance, all of which contribute to long-term well-being.

Therefore, companies and MSEs should encourage the formation of social capital in the workplace through strengthening an inclusive work culture, team-based training, and togetherness activities. Social capital not only strengthens relationships between individuals in the organization but also provides a strong foundation for the growth of workers' overall well-being.

3.3 The Influence of Natural Capital on Worker Well-being

Natural capital makes an important contribution to workers' welfare, as reflected in the results of the regression analysis, which shows a coefficient of 0.145 and a significance value of 0.009. This value confirms that a healthy working environment managed with sustainability principles can significantly improve workers' welfare. In Sustainable Living capital theory, natural capital such as clean air, green spaces, and waste management are key factors in creating a workplace that supports health and productivity. A healthy physical work environment has a direct impact on workers' physical and mental health. Clean air, natural lighting, and green open spaces increase comfort and reduce workers' stress levels. In addition, a work environment that is free from pollution and hazardous waste also lowers the risk of illness, absenteeism, and work injuries, which in turn increases productivity and job satisfaction.

In natural resource-based sectors, such as agriculture and forestry, the quality of natural capital is a key determinant of income stability. Fertile soil, sufficient water, and efficient environmental management support worker productivity throughout the year. Studies by Smith et al. (2021) and Johnson & Liu (2020) show that good natural resource management not only maintains environmental quality, but also supports economic welfare through income stability and reduction of seasonal unemployment. Life Cycle Income theory is also relevant in explaining the importance of natural capital. When the quality of the work environment is maintained in the long term, workers can maintain productivity and income until retirement. A healthy work environment extends workers' productive working lives and reduces the burden of health expenditures, meaning workers' financial well-being becomes more stable throughout their lives.

MSEs and other business entities should therefore make environmental sustainability part of their management strategy. Waste management, green space utilization, and improved air quality in the workplace are forms of investment in workers' well-being. This approach is not only a social responsibility but also a business strategy that creates a healthier, more productive, and loyal workforce.

3.4 The Effect of Physical Capital on Worker Well-being

Physical capital, such as buildings, work equipment, and technology, has a strategic role in supporting workers' welfare. Based on the results of the regression analysis, the coefficient of this variable is 0.102 with a significance of 0.027, indicating that physical capital has a positive and significant effect on workers' welfare. This finding is in line with the Sustainable Living capital theory, which emphasizes the importance of work infrastructure in creating work efficiency and safety.

A work environment equipped with adequate physical facilities, such as a clean and safe workspace, modern technology, and ergonomic equipment, allows workers to perform their duties optimally. Quality physical capital also reduces the risk of work injuries and accidents, which contributes to psychological safety and work comfort. This has a direct impact on worker productivity and job satisfaction.

In the context of the labor market, the availability of good physical facilities increases the attractiveness of companies in the eyes of potential workers. Workers tend to choose workplaces that offer convenience and efficiency, which in turn also impacts workforce loyalty and retention. Studies by Garcia & Martinez (2021) and Johnson & Smith (2020) show that improved work facilities lead to increased job satisfaction and productivity.

Physical capital also plays an important role in maintaining workers' income in the long run, as emphasized in the Life Cycle Income theory. Adequate infrastructure allows workers to maintain high productivity until retirement age. In addition, the use of technology in work processes also provides opportunities for training and development of new skills, which contributes to increasing workers' value in the

labor market. Overall, strengthening physical capital should be a priority in MSE management. Investment in facilities and technology is not only to improve operational efficiency, but also to create working conditions that support workers' welfare and survival. The success of a business is not only measured by its output, but also by the quality of life of its workers.

3.5 The Effect of Financial Capital on Worker Welfare

Financial capital is an important factor that supports the long-term welfare of workers. The regression results show that this variable has a coefficient of 0.110 and a significance value of 0.001, indicating that financial capital has a positive and significant influence on workers' welfare. Financial capital includes income, access to savings, credit, and financial protection that enable workers to manage risk and improve quality of life. Access to a stable and sufficient income enables workers to fulfill their basic needs, such as food, education, and health. In addition, savings and access to credit allow workers to invest in further education or start side businesses that can increase income. Research by Williams & Taylor (2021) and Johnson & Smith (2020) shows that access to finance strengthens workers' economic resilience in the face of crisis and improves the welfare of their families. From a labor market perspective, workers who have financial reserves are more flexible in choosing more suitable and meaningful work. They are not forced to accept less suitable jobs simply because of economic pressures. In addition, they can finance skills upgrading, such as attending training or certification, which improves their position in the labor market. Based on the Life Cycle Income theory, financial capital plays a role in maintaining income stability throughout a worker's life cycle. Savings, investments, and insurance protection are important means of maintaining welfare after the end of the productive years. Davis & Brown (2019) show that workers who can manage their finances well tend to have income stability and a higher quality of life until retirement age.

Thus, it is important for MSE actors and the government to support financial literacy and access to inclusive financial services. Pension programs, worker savings, and partnerships with microfinance institutions are strategic steps to improve worker welfare. Strong financial capital provides a sense of security, increases productivity, and creates economic independence for workers in the long run.

4. Discussion and Policy Implications

The findings provide several actionable policy implications for strengthening the welfare of MSE workers in Palembang. First, policymakers should prioritize targeted training programs that enhance both technical and managerial skills of workers, particularly for culinary, services, and fashion subsectors that dominate the city's MSE landscape. Such training could focus on digital marketing, financial literacy, and quality control to improve competitiveness and resilience. Second, the local government, in collaboration with cooperatives and private actors, should encourage partnerships with microfinance institutions and community-based savings groups to expand workers' access to affordable credit, thereby strengthening their financial capital. Third, municipal authorities should develop localized environmental sustainability programs—for example, incentives for waste management or green workspace initiatives—to safeguard natural capital while enhancing workers' well-being. These policies would complement human, social, and physical capital development strategies by creating an integrated support ecosystem for MSEs in Palembang.

At the same time, this study has certain limitations that must be acknowledged. Since the analysis is based on survey data from 396 respondents, the results may face generalizability challenges, especially when applied beyond Palembang's urban context or across different types of enterprises. Furthermore, the reliance on self-reported data may introduce response biases, which can affect the accuracy of welfare assessments. Future research should therefore integrate mixed-method approaches combining quantitative surveys with qualitative interviews or case studies to capture deeper insights into workers' lived experiences. Despite these limitations, the evidence presented offers a strong foundation for designing locally responsive and sustainable policy interventions.

To complement the quantitative findings, it is also relevant to consider potential qualitative insights. For example, anecdotal evidence from MSE workers in Palembang often highlights struggles such as balancing long working hours with family responsibilities, coping with unstable income during off-peak seasons, or navigating limited access to affordable credit. These narratives provide a more nuanced understanding of how human, social, and financial capital are experienced in daily life, beyond what numerical indicators capture. While the present study relied on quantitative survey methods to ensure generalizability across 396 respondents, the absence of in-depth qualitative perspectives represents a limitation. Therefore, future research should consider adopting a mixed-method approach, integrating interviews or case studies with survey data to capture the lived realities of MSE workers. This integration would not only enrich statistical findings but also provide policymakers with contextually grounded insights to design interventions that are responsive to workers' actual challenges.

5. Conclusions and suggestions

This study examines the influence of five forms of capital on the welfare of workers in the micro and small enterprise (MSE) sector in Palembang City. Based on multiple linear regression analysis, it was found that the five capitals of human, social, natural, physical, and financial capital have a positive and significant influence on the level of worker welfare. Human capital reflects the importance of education, skills, and health; social capital shows the role of social relations and solidarity; natural capital highlights a supportive work environment; physical capital refers to the availability of facilities and infrastructure; and financial capital is related to the ability to meet workers' economic needs. The R^2 value of 0.260 indicates that 26% of the variation in workers' welfare can be explained by these five types of capital, while the rest is influenced by other factors. Therefore, it is recommended that further research consider other factors such as psychological capital, leadership, and labor regulations, as well as consider a qualitative or mixed approach to enrich the results and explore the social context that influences the welfare of MSE workers.

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