FACTORS INFLUENCING LABOR ABSORPTION IN SMALL INDUSTRIES IN PADANG

Sazilla Aulia[1]
Universitas Islam Riau, Pekanbaru, Indonesia
sazillaaulia@student.uir.ac.id

Sinta Yulyanti[2]
Universitas Islam Riau, Pekanbaru, Indonesia
sintayulyanti@eco.uir.ac.id

Abstract

This study aims to analyze the influence of Raw Material Value, Investment Value and Production Value on labor absorption in small industries on Padang. This study uses a quantitative approach. The data used is secondary data obtained from the official publication of the Statistics Indonesian Center. The data analysis method used is time series data regression using the eviews analysis tool 12. The results of the analysis show that the value of raw materials has a positive and significant effect on the absorption of small industrial workers in Padang. The value of investment has a negative and insignificant effect on the absorption of small industrial workers in Padang. Production value has a negative and significant effect on the absorption of small industrial workers in Padang. From the results of the determination test, this means that the absorption of small industrial labor in Padang can be explained by the variables of raw material value, investment value, and production value with a value of 79.79%, while the remaining 20.21% is explained by variables outside the research model.

Keywords: Labor, Production Value, Invesment Value, Raw Material Value, Small Industry

INTRODUCTION

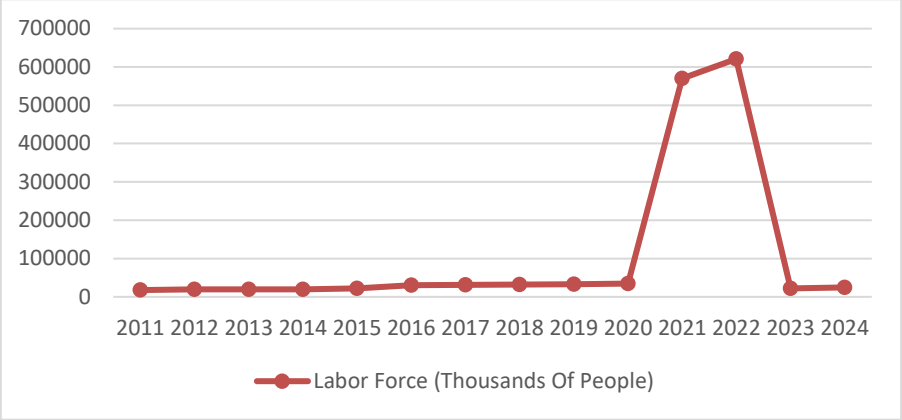
The Economic development is a process that causes an increase in the real per capita income of a country's population over a long period and accompanied by improvements in the institutional system (Muaidy Yasin et al., 2020). The main aspect in achieving economic development is the creation of extensive job opportunities for all layers of society. The creation of these job opportunities can also help address the problems of unemployment, poverty, and income inequality. In reducing these problems, a good strategy is needed in encouraging sectors that are easy to develop and have high labor absorption. One of the increases in economic development of a region is seen from the development of its industrial sector. Because labor absorption is one of the supporting factors for industrial businesses (Bella, 2018). Therefore, there are many regions that focus their economic activities on the industrial sector, especially small industries.

Small industries are one of the easiest to develop because it does not require very large capital. Based on the Industry Law No. 3 of 2014 concerning Industry, where the government or local governments must develop and empower small and medium industries to realize competitive small and medium industries and produce industrial goods and services for export. According to the Statistics Indonesian Center (BPS), small industries need as many as 5-19 workers. A fairly good industrial development is based on local resources that are used to the maximum by the local community. Research conducted by Azhari and Akbar (2019) on the small and medium-sized industry sector in Padang from 2007 to 2017 found that investment, minimum wages, and production value affect labor absorption. However, the study did not specifically discuss small industries, even though the characteristics and cost structures of small industries and SMEs are different, meaning that the dynamics of labor absorption cannot be generalized. In addition, previous studies did not include the variable of raw materials, even though this component is a major cost element in small industries and has the potential to affect labor requirements. The study also used data only up to 2017, so it does not reflect changes in industrial conditions after the pandemic and recent economic developments. Therefore, further research is needed that specifically analyzes the impact of raw materials, investment, and production on labor absorption in small industries in Padang using more up-to-date data.

Small industries in Padang play a strategic role in expanding employment opportunities and supporting community economic activities. Various types of businesses such as food, clothing and leather, chemical and building materials, metal and electronics, and handicraft industries are an important part of the local economic structure. This role is becoming increasingly crucial given that small industries are flexible, easily developed, and do not require large amounts of capital, enabling them to adapt to changes in market demand and economic conditions. Efforts to increase employment in this sector can be achieved by strengthening production processes and business management. Several important factors that reflect the development of the small industry sector include the amount of raw materials used, the amount of investment made, and the value of production generated. The availability of sufficient and affordable raw materials enables businesses to increase production volume, which ultimately has the potential to increase labor demand. Similarly, investment plays a role in expanding business capacity through the addition of equipment, technological improvements, and product quality enhancements. Increased production value reflects

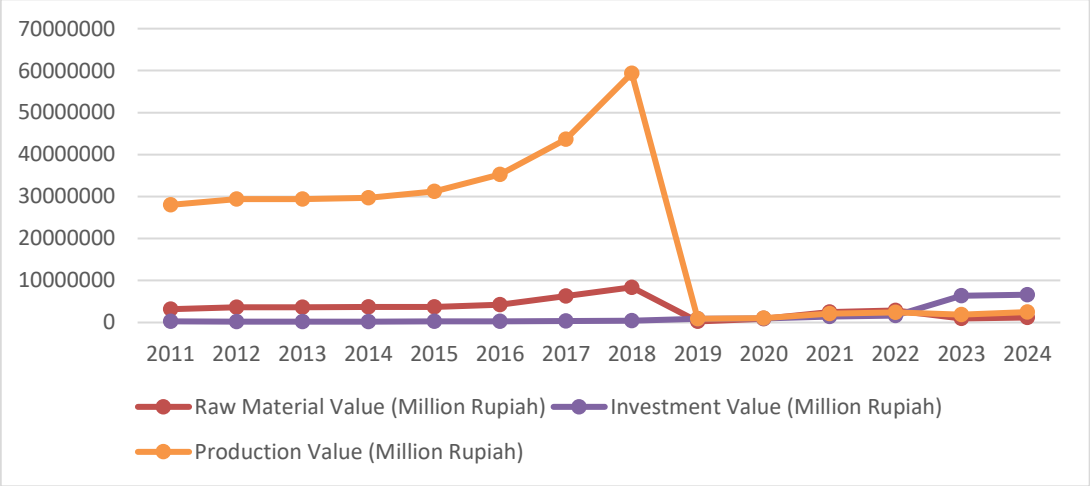
overall business performance progress and can be an indicator that small industries are capable of growing and absorbing more labor.

Figure 1
Number of Workers in the Small Industry Sector in Padang



Source: Statistics Indonesian Center

Figure 2
Value of Raw Materials, Production Value, and Investment Value of Small Industry in Padang



Source : Statistics Indonesian Center

From this data, the number of workers in the industrial sector of Padang shows varied developments. From 2011 to 2022, the number of workers continued to increase, but in 2023 it decreased and increased again in 2024. On the other hand, the value of raw materials shows varied developments, investment values that continue to increase and production values that increase even though they fluctuate. it doesn't always increase even though investment and production continue to grow. Small industries have their own characteristics, namely a relatively limited business scale and the absorption of labor is more focused on local needs. This characteristic will create a different pattern of influence compared to industries with the status of small and medium industries (SMEs). Based on this, this study aims to further

analyze the influence of the development of small industries in Padang on the absorption of labor in Padang

REVIEW OF LITERATURE

Labor

Law of the Republic of Indonesia No. 13 of 2003 concerning manpower explains that labor is every person who is able to work to produce goods and services to meet personal or community needs. Labor absorption is the amount of labor used in a particular business unit. Labor absorption can be interpreted as a balance between the demand and supply of labor together so that it can determine the equilibrium wage and a labor balance (Putu & Gusti, 2019). According to (Ratnasari, 2015) labor absorption is the number of labor force that works or that can be absorbed by the job market. Thus, the number of people who work depends on the demand for labor by the available job market.

The Influence Of Raw Material Value On Labor Absorption

The value of raw materials is something used in the process of making finished goods, the raw materials must be attached to the finished goods (Harahap & Prima, 2019). Raw materials are also part of intermediate inputs or costs. According to the Central Statistics Agency, intermediate inputs or costs are expenses incurred in the industrial process in the form of raw materials, fuel, other goods apart from auxiliary materials, industrial services, building rentals, and non-industrial service costs. Raw materials are an important part, even though labor is available, the production process will not run if there are no raw materials. In production theory, a company's output is generated from a combination of input factors such as labor, capital and raw materials (Anggraini et al., 2022). The increase in raw materials indicates an increase in production output, so the industry tends to need labor to maintain the balance of inputs in the production process (Astuti et al., 2025). Research by (Soca & Woyanti, 2021) shows that an increase in input costs is positively related to an increase in the number of workers absorbed. When input costs increase as part of business expansion, a company's production capacity tends to increase. This condition allows businesses to continue to grow, open new business units, and require additional workers to meet greater production needs.

The Influence Of Invesment Value On Labor Absorption

Investment value is the funds spent to increase capital inventory. The amount of investment in the community will affect the creation of jobs because investment can increase production activities so as to create jobs (Tengkoe & Soekarnoto, 2014). In the theory of economic growth by Solow explains that long-term economic growth is determined by the accumulation of physical capital, the increase of labor and technological advancement. In this case, savings and investment are the main factors in determining production capacity, Solow emphasized that growth will not continue without technological innovations that encourage productivity (Zaharani & Nasir, 2025). If investment can become a reliable pillar, then the multiplier effect on the economy is that an increase in investment will affect the addition of capital stock. An increase in capital stock will increase productivity as well as production capacity and quality, which in turn will drive business or industrial expansion, thereby increasing employment (Rastri & Christianingrum, 2017). According to (Basuki, 2015) in his research, increased investment by small industries can be used to add production

factors in the form of labor and/or technology, thereby increasing production value. Investment can also be used to establish new small industrial business units,which will create new labor demand for the production process.

The Influence Of Production Value On Labor Absorption

Production value is the level of production or the overall quantity of goods produced by an industry (Fadel et al., 2021). The demand for labor is derived demand, which means that employers' demand for labor is highly dependent on public demand for their products. Therefore, in order to retain the labor used by the company, the company must have the ability to compete for domestic and foreign assets (Darusman, 2015). There are several factors that companies consider in their demand for labor, one of which is the Marginal Product of Labor (MPL), which is the increase in output resulting from the addition of each unit of labor until the point where the marginal revenue product of labor is equal to the marginal cost of labor (wages) (Wahyuni B. et al., 2020). According to Fadel (2021) in his research, production affects employment because the level of goods produced depends on the level of consumer demand. The higher the demand for goods, the higher the level of goods produced, and the higher the level of employment required by the company. However, in the modern industrial era, the use of technology is more prevalent in the manufacturing sector. The higher the number of goods demanded by consumers, the higher the number of goods produced, so the higher the number of workers demanded by the company. However, entering the modern industrial era, the use of technology is more widely used by industrial sectors, due to the progress of the era towards digitalization (industry 4.0).

RESEARCH METHOD

This study uses a quantitative approach with secondary data, during the period of 2011-2024 in Padang. The data obtained is official publication data from the Source Statistics Indonesian Center. This study uses the analysis method time series with the help of software Eviews 12. Meanwhile, to analyze the Influence of Raw Material Value, Investment Value and Production Value on the Labor Absorption of Small Industrial in Padang, a multiple regression model with the following equation is used:

$$\log Y = \beta_0 + B_1 log X_1 + B_2 log X_2 + B_3 log X_3 + e$$

Where Y is the Absorption of Small Industrial Labor in Padang, X1 is the Value of Raw Materials of small industries in Padang, X2 is the Investment Value of small industries in Padang, X3 is the Production Value of small industries in Padang, β0 is constant, β1 and β2 are regression coefficients, and ε is an error.

The tests in this study consisted of partial tests (t-test), simultaneous tests (F-tests), and determination coefficients (R^2) to measure the model's ability to explain variations in dependent variables. To ensure the validity of the model, classical assumption tests were carried out including: (1) residual normality test using Jarque-Bera; (2) multicollinearity test with Variance Inflation Factor (VIF); (3) heteroscedasticity test with heteroscedasticity and (4) autocorrelation test with Durbin-Watson statistics.

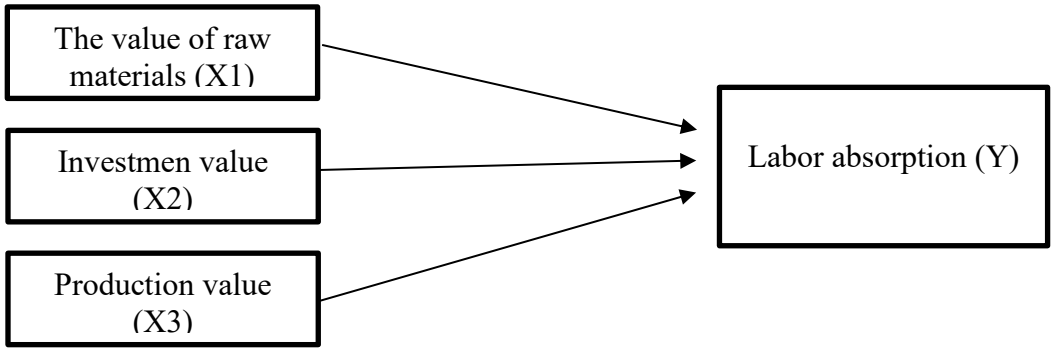
Research Hypothesis

This study aims to analyze the effect of raw material value, investment value, and production value on labor absorption in small industries in Padang. Based on a review of the literature and previous studies, the hypotheses proposed in this study are as follows:

- H1: The value of raw materials has a significant effect on labor absorption in small industries in Padang.
- H2: The investment value has a significant effect on labor absorption in small industries in Padang.
- H3: The production value has a significant effect on labor absorption in small industries in Padang.
- H4: The value of raw materials, investment value and production value simultaneously have a significant effect on labor absorption in small industries in Padang.

Research Model

This research model describes the relationship between independent variables (the value of raw materials, investment value and production value) to dependent variables (Labor absorption). This model can be illustrated as follows:

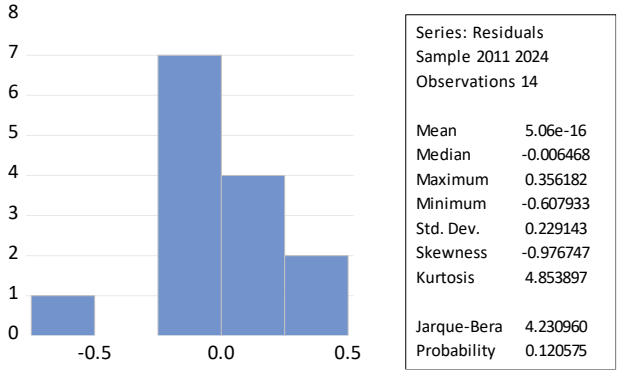


This research model shows that the three independent variables have a direct relationship with labor absorption, which will be tested through multiple linear regression analysis using Eviews 12 software. This study uses a quantitative approach with secondary data obtained from the central statistics agency. The results of this study are expected to provide deeper insights for local governments in increasing employment through developments in small industrial sectors such as raw material value, investment value, and production value.

RESULTS AND DISCUSSION

Based on the results of the classical assumption test, namely:

Figure 3.
Normality Test



Source: Data processed (2025)

The results of the normality test indicate that the residuals in the model are normally distributed. This is indicated by the Jarque–Bera probability value of 0.120575, which is greater than the 0.05 significance level. Thus, the regression model meets the classical assumption of normality and can be used for further analysis.

Table 1.
Multicollinearity test

	Coeficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	5.500004	1128.070	NA
X1	0.135567	1137.205	4.174052
X2	0.052920	368.4627	2.806468
X3	0.078392	789.2749	7.137239

Source: Data processed (2025)

The results of the multicollinearity test indicate that all independent variables do not experience multicollinearity problems. The Variance Inflation Factor (VIF) values for each variable, namely X1 of 4.174052, X2 of 2.806468, and X3 of 7.137239, are all below the tolerance limit of 10. Thus, it can be concluded that the relationship between independent variables in the model is still at an acceptable level so that the regression model is suitable for use without any indication of violation of the multicollinearity assumption.

Table 2.
Heteroscedasticity test

Heteroskedasticity Test: White			
Null Hypothesis : Homoskedasticity			
F-Statistic	152.1775	Prob. F(4,9)	0.0001
Obs*R-Squared	13.95923	Prob. Chi-square (9)	0.1238
Scaled explained SS	13.72384	Prob. Chi-Square(9)	0.1325

Source: Data processed (2025)

The heteroscedasticity test results show a Chi-Square probability value of 0.1238, which is greater than the significance level of 0.05. Therefore, it can be concluded that the regression model does not experience heteroscedasticity and meets the necessary classical assumptions.

Table 3.
Autocorrelation test

Statistic	Value
R-Square	0.797969
Adjusted R-Square	0.737359
F-Statistic	13.16577
Prob (F-Statistic)	0.000831
Durbin-Watson Stat	2.876578

Source: Data processed (2025)

The autocorrelation test, as seen from the Durbin-Watson value of 2.876578, shows that the model is in a hesitant position approaching the autocorrelation-free area.

Table 4.
Results of The T-Test Statistics

Variable (1)	Coeficien (2)	Prob. (3)
The Value Of Raw Materials	2.013991	0.0003***
Investment Value	-0.395234	0.1165
Production Value	-1.565879	0.0002***
Constant	4.952417	0.0609**
Prob F-Statistic	0.000831***	
R-Squared	0.797969	
***p < 0.01, **p < 0.05, *p < 0.10		

Source: Data processed (2025)

Table 4 shows that the regression equation model is as follows:

$$Y=4.952417 + 2.013991X1 - 0.395234X2 - 1.565879X3 + e$$

The analysis shows that the raw material value variable positively and significantly affects labor absorption in small industries in Padang. Based on the t-test, the raw material value variable (X1) shows a probability of (0.0003 <0.05) with a coefficient value of 2.013991. Since the significance value is less than 0.05, the first hypothesis (H1) is accepted, meaning that if there is an increase in raw material value, labor absorption will increase. Conversely, empathy has no significant effect on customer satisfaction. The t-test results show that the investment value variable shows a probability of (0.1165>0.05) with a coefficient value of -0.395234. Because the significance value is greater than 0.05, the second hypothesis (H2) is rejected, indicating that the investment value has a negative and insignificant effect on labor absorption in small industries in the city of Padang. Finally, the production value variable shows a probability of (0.0002 < 0.05) with a coefficient value of -1.565879. Statistically, the production value of small industries has a negative and

significant effect on labor absorption in small industries in Padang. The third hypothesis (H3) is accepted, meaning that if there is an increase in production value, labor absorption will decrease.

F Test

Although partially, only the raw material value and production value variables are significant, the F test shows that simultaneously, the raw material value, investment value, and production value affect labor absorption in small industries in Padang. This is evidenced by the probability value of 0.000831, which is less than 0.05. In addition, the R Square value is 0.797969. This means that small industry employment in Padang can be explained by independent variables (raw material value, investment value, and production value) by 79.79%, while the remaining 20.21% is explained by variables outside the research model.

The Effect of The Value of Raw Materials on Labor Absorption

The results of this study indicate that the value of raw materials significantly and positively affects labor absorption in Padang. This is in accordance with the research of Helmy Fuadi (2025) and Alfina Anggi Agustin (2021) where the value of raw materials has a positive effect on labor absorption. If the raw materials used in the industry are on a large scale, the industrial owner will increase the number of workers. Because producing raw materials to create production results requires labor in the processing process. The increasing increase in food raw materials increases the absorption of labor in an industry.

The Effect of Invesment Value on Labor absorption

The results of the regression of the T test on the investment value variable showed the value of small industry investment has a negative effect on the absorption of small industrial workers in Padang. This is in line with research conducted by Muhammad Fadel (2021) which states that the value of investment has no effect on the absorption of labor in the industrial sector. In Fadhilah Surianto's (2023) research, this condition also shows the same results, this condition is caused by investment tending to be oriented towards the procurement of capital-intensive machinery or technology so that there is no additional workforce. The investment made in this sector is used to buy machines to increase production capacity. So that human labor is replaced by machine labor. The Solow-Swan model also explains that technological advances can increase the efficiency of labor in carrying out production activities. The existence of technological advances does not increase the actual number of workers but increases the amount of output produced or increases the number of effective workers (Juhro & Trisnanto, 2018).

The Effect of Production Value on Labor Absorption

The results of the regression of the T test on the Production Value variable showed the production value of small industries has a negative and significant effect on the absorption of small industrial labor in Padang. This result shows that if the value of production increases by 1%, then labor absorption will decrease by 1.565879%. This is in line with research conducted by Linda Kurnia Dewi (2018) which states that the value of production has a negative effect on labor absorption. Due to the use of advanced technology and machines, even if there is an increase in production output, it will not increase the workforce because with advanced machines and technology is enough. The results of this study are also in line with the research conducted by Dian Widya Nugrahaeni (2020), who stated that the value of production has a negative effect on labor absorption. The increase in production is more due

to an increase in the quality of labor and the quality of technology so that there is no additional workforce.

CONCLUSION

Based on the results of the above research on the factors that affect the absorption of small industrial workers in Padang, it can be concluded that the variable value of raw materials has a positive and significant effect on the absorption of labor in small industries in Padang. This shows that the increase in the value of raw materials used in the production process tends to be followed by an increase in the number of labor. On the other hand, the variable investment value showed a negative and insignificant influence on the absorption of small industrial workers in Padang. This condition can occur because investment is capital-intensive. Meanwhile, the value of production has a negative and significant effect which shows that the increase in the value of production is not always accompanied by an increase in the workforce, especially the use of more modern technology.

The limitation in this study is that the variables used are only limited to the value of raw materials, investment value and production value so that other factors that also have the potential to affect labor absorption such as the number of industrial units, wages or economic growth have not been revealed. In addition, this study only focuses on areas in Padang so that the results cannot necessarily be generalized to other areas that have different economic characteristics.

Based on the results of the research and these limitations, there are several suggestions that can be given. For small industry players, the increase in the workforce can be optimized through a production strategy that does not rely entirely on technology. For local governments, there needs to be a policy that encourages investment to be more labor-intensive than capital-intensive. In addition, further research is recommended to add other variables or expand the research area to make the results more comprehensive.

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