

# Analysis of the Influence of Employment, Manufacturing Industry Sector on Industrial Agglomeration in Sumbagsel in Islamic Economic

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## Abstract

The manufacturing industry in South Sumatra is experiencing rapid growth driven by investment, rising domestic demand, and supportive government policies, yet it also faces challenges such as globalization and supply chain disruptions. This study applies a quantitative method with panel data regression to analyze the impact of population, the Human Development Index (HDI), and trade openness on industrial agglomeration. The results indicate that while employment shows a positive but statistically insignificant effect, and the manufacturing sector a negative but also insignificant effect on industrial agglomeration, both variables collectively have a significant influence. From an Islamic economics perspective, the industry should be managed based on sharia principles, focusing on collective welfare and promoting cooperation over competition. In conclusion, although labor absorption and the manufacturing sector do not individually exert a significant effect, their combined influence plays an important role in shaping industrial agglomeration.

## Keywords

Labor Improvement; Manufacturing Industry Sector; Industrial Agglomeration

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## 1. INTRODUCTION

In Indonesia, including the province of southern Sumatra (Sumbagsel), has experienced significant growth in the manufacturing industry in recent years (Saragih, 2019). Industrial agglomeration is becoming increasingly crucial amid the rapid growth of the manufacturing sector in Sumatra. By bringing together various industrial entities in one geographic location, such as factories, suppliers and support services, a mutually beneficial ecosystem is created. This promotes efficiency through reducing logistics and transport costs, facilitating the exchange of knowledge and innovation between companies, and attracting further investment thanks to the availability of infrastructure and skilled labor. Agglomeration also enables specialization and the formation of industrial clusters, which ultimately increases the competitiveness of Sumatran manufactured products in national and global markets, as well as creating more jobs and driving regional economic growth significantly (Zuliasri et al., 2013).



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The manufacturing industry in the southern Sumatra (Sumbagsel) region faces various challenges rooted in international issues that affect the competitiveness and sustainability of the sector. One of the main challenges is the impact of globalization and competition with other countries' manufacturing industries, especially from China and ASEAN countries that have lower production costs. In addition, supply chain disruptions due to the COVID-19 pandemic have changed international trade patterns, increased dependence on imported raw materials, and slowed the growth of local industries.

Another challenge is the development of technology and automation that is driving changes in the workforce structure of the manufacturing industry. Although the adoption of technology can increase efficiency, it also demands an increase in the skills of the workforce in order to adapt to a high-tech production-based system. Environmental and sustainability issues are also of concern, especially with increasing international regulations related to carbon emissions and environmentally friendly production standards (Athaya et al., 2025). The manufacturing industry in Sumbagsel needs to adopt a green economy approach that is in line with Islamic economic principles, such as balance and sustainability, in order to continue to thrive amid increasingly stringent global demands. (Kurniati et al., 2022)

There are several theories that attempt to explore the concept of agglomeration. The term agglomeration arose basically from Marshall's idea of saving agglomeration (agglomeration economies) or in Marshall's terms referred to as localized industries (localized industries) (Novirin, 2021). Agglomeration economies or localized industries, according to Marshall, arise when an industry chooses a location for its production activities that allow it to take place in the long term so that the community will benefit a lot if it follows the action of setting up a business around the location. So that agglomeration savings as savings due to adjacent locations (economies of proximity) associated with the grouping of companies (Hasan, 2022).

Industrial agglomeration is the phenomenon of geographic concentration of economic activity, in which economically related companies, industries, or businesses are centralized within a given region (Muhammad Yasin et al., 2024). The concept is often the focus of study because of its impact on economic efficiency, innovation, and regional development. This study also highlights the phenomenon of industrial agglomeration plays a crucial role in economic growth, the existing literature often has not fully explored the dynamics of agglomeration in non-Javanese areas, including Sumatra. Most studies tend to focus on experiences in Java, ignoring the unique characteristics, potentials, and challenges that exist outside the island. Furthermore, there is a significant lack of integration of Islamic economic values in agglomeration analysis. Conventional approaches often override sharia principles such as justice, sustainability, and equity, which can actually provide valuable perspectives for understanding and optimizing the benefits of agglomerations for the welfare of society in a more holistic manner. This gap

indicates the need for more comprehensive research to bridge the geographical scope and ethical dimensions in the study of industrial agglomerations.

**Figure 1.1**  
**Graph Of Industrial Agglomeration In Sumbagsel Period 2015-2023**



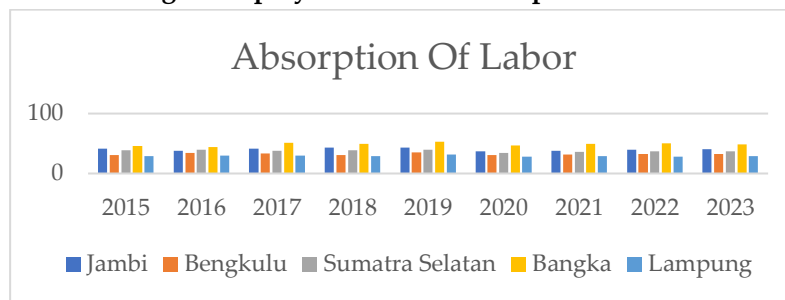
Source: Central Bureau of Statistics, data processing 25 December 2024

Based on the data provided, it can be seen that fluctuations in the value of industrial agglomerations in Sumbagsel are observed. A high value indicates a high level of industrial concentration in a region, which can indicate the presence of higher production efficiency, innovation and economic growth.

In general, it can be seen that the agglomeration in Sumbagsel no increase tends to decrease over time. caused by various factors such as changes in government policies, shifts in industrial centers, or unstable economic conditions. Based on research findings that have been discussed by (Sabatina, 2021), it can be concluded that there is a nonlinear relationship between the labor productivity of the processing industry and the agglomeration. The increase in labor density will increase the productivity of the processing industry, but the increase in productivity will be smaller.

If Labor density has passed the saturation level, then labor productivity shows signs of declining (WIJAYA, 2022). This is due to the fact that in the project site where a number of workers work, there is always a rush of people, noise accompanying equipment movements (MUJIBURROKHMAN, 2022). The higher the number of workers per area, the busier the activities in the area, will eventually reach a point where the smoothness of work is disrupted and lead to a decrease in productivity (Soleiman, 2019). The trend of employment in the manufacturing industry sector has shown significant fluctuations in recent years. For example, data from 2015 to 2023 show that despite an increase in the number of business units, employment is not always proportional to such growth. This raises questions about the factors that affect employment, including the influence of GRDP, the number of business units, and the district minimum wage (UMK). Previous research in East Java showed that GRDP and the number of business units have a significant influence on employment, but research in Sumbagsel is still limited (Yusuf et al., 2023).

**Figure 1.2**  
**Sumbagsel employment chart for the period 2015-2023**



*Source: Central Bureau of Statistics, data processing 25 December 2024*

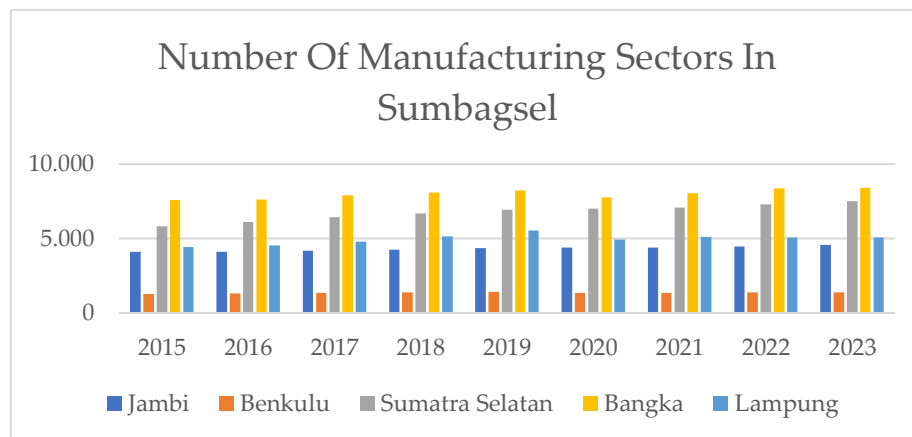
Data on employment in southern Sumatra (Sumbagsel) from 2015 to 2023 show a varied picture. Based on data from the Central Statistics Agency processed on December 25, 2024, the employment chart in Sumbagsel during that period most likely depicts fluctuations in the number of workers, unemployment rate, and labor distribution in various economic sectors such as agriculture, industry, and services. Although general trends may indicate growth in the number of working-age population accompanied by increased labor force participation, regional and national economic conditions, such as changes in the prices of key commodities or investment policies, can affect job stability and create unique dynamics from year to year.

Employment in Sumbagsel does show a relatively stable trend, but this data does not yet fully reflect the complexity of the regional job market. A significant gap is seen between provinces that have a high concentration of industry and those that do not. This is not just an issue of equity, but an indication that industrial agglomerations, which are supposed to be the engine of employment, can actually backfire if not managed properly. This uneven concentration of industries created an economic imbalance. On the one hand, industrially rich regions may experience economic growth, but on the other hand, others remain lagging behind. This condition is aggravated by the low quality of Labor, which makes existing industries unable to absorb labor optimally. This gap shows that a more integrated approach is needed, not only to increase the number of jobs, but also to improve the quality of human resources to match the needs of the industry (Mukhlis et al., 2019).

The manufacturing sector in Sumbagsel has a central role in the absorption of labor, but this role does not always go straight. Instead of being a single solution, the sector can be counterproductive if industrial agglomerations are not accompanied by inclusive and strategic policies. In the absence of adequate infrastructure support and a conducive investment climate, these industries have difficulty competing, which ultimately limits their capacity to absorb labor (Mepriyanto & Saptutyningsih, 2019). In the perspective of Islamic economics, the main purpose of employment is to create social welfare and distributive justice. This means that the absorption of Labor should not be oriented only on economic

benefits. Instead, efforts must be made to ensure that the benefits of industrial growth include equitably distributed employment. Therefore, further research is needed that not only looks at the causal relationship between industrial agglomerations and employment absorption, but also integrates social justice values to produce more holistic and sustainable solutions (Taufiqurokhman et al., 2023).

**Figure 1.3**  
**Sumbagsel Manufacturing Industry Sector Chart For The Period 2015-2023**



*Source: Central Bureau of Statistics, data processing 25 December 2024*

There is a significant difference in the number of manufacturing industries between the provinces in Sumbagsel. Some provinces such as Bangka tend to have a larger number of manufacturing industries compared to other provinces. These differences can be caused by several factors, such as different natural resource potentials, better infrastructure, or government policies that are more supportive of industrial development.

Based on the available data, it can be concluded that the manufacturing industry sector in Sumbagsel experiences quite complex dynamics. Differences in the number of manufacturing industries between provinces reflect differences in potential and economic conditions in each region. To formulate an effective Industrial Development Policy, a more in-depth and comprehensive analysis is needed.

The growth of the manufacturing industry sector in the southern Sumatra region (Sumbagsel) is an interesting phenomenon in the context of economic agglomeration, although its development has not been evenly distributed between provinces (Nurcahani, 2021). Industrial agglomerations in this region face structural challenges such as inequality in the distribution of economic activity, where provinces such as South Sumatra and Lampung show a higher concentration of industry than Bengkulu or Bangka Belitung. Previous studies in Java revealed that urbanization economies (industrial diversity) have a positive impact on productivity, while localization economies (concentration of similar industries) have the potential to reduce efficiency due to excessive competition. This phenomenon is

compounded by the lack of technology transfer between companies and limited access to local raw materials, which encourages import dependence.

The manufacturing industry sector has a great influence on industrial agglomeration, that is, the concentration of companies within a given area (Rif'ah & Hidayati Putri, 2024). As the manufacturing sector grows, many similar companies tend to gather in one location. This happens because they can support each other, such as sharing resources, skilled labor, and better infrastructure. For example, if there are many factories in one area, they can get raw materials more easily and reduce transportation costs. Conversely, when there is a strong industrial agglomeration, this can also increase the productivity of the manufacturing sector. Adjacent companies can learn from each other and exchange knowledge, which helps them become more efficient and innovative. In other words, the more factories gathered in one place, the more likely they are to expand and increase production output (Widodo and Woyanti 2023).

However, there are a few things to note. For example, if too many companies gather in one location without good planning, problems such as congestion or environmental pollution can occur. Therefore, it is important to manage the growth of the industry wisely so that the benefits of agglomeration can be maximized without causing negative impacts.

In the perspective of Islamic economics, industrial agglomeration can be reviewed through the principles of fairness of resource distribution and economic sustainability (Anggraini & Bahtiar, 2024). Islam emphasizes the importance of equity in the distribution of wealth and economic benefits so that all people can feel the positive impact of development (Anami & Haqan, 2024). In addition, the concept of maqāzid al-sharī'ah (objectives of Sharia) provides a foundation in ensuring that economic policies, including in the manufacturing industry sector, not only prioritize growth, but also provide positive social impacts, such as reducing economic disparities and protecting the environment. As Allah says in the Qur'an surat al-Hashr : 7

مَا أَفَاءَ اللَّهُ عَلَى رَسُولِهِ مِنْ أَهْلِ الْقُرَىٰ فَلِلَّهِ وَلِلرَّسُولِ وَلِذِي الْقُرْبَىٰ وَالْيَتَامَىٰ وَالْمَسْكِينِ وَابْنِ السَّبِيلِ كَيْ لَا يَكُونَ دُولَةً بَيْنَ الْأَغْنِيَاءِ مِنْكُمْ ۚ وَمَا آتَاكُمُ الرَّسُولُ فَخُذُوهُ وَمَا نَهَاكُمْ عَنْهُ فَانْتَهُوا ۚ وَاتَّقُوا اللَّهَ ۚ إِنَّ اللَّهَ شَدِيدُ الْعِقَابِ

Whatever spoils Allah gives to his messenger from the people of the cities belongs to Allah, and to the Messenger, and to the relatives, and to the orphans, and to the needy, and to those who are on a journey, so that they may not circulate among the rich among you. Whatever the Messenger gives you, accept it. And whatever he forbids you, leave it. And fear Allah. Indeed, Allah is severe in punishment.

Industrial agglomeration, which refers to the concentration of the manufacturing sector in a region to increase efficiency and productivity, is closely related to the principle of economic distribution in Islam set out in the Qur'an. In Surat al-Hashr verse 7, Allah SWT says: "... so that the property should not circulate only among the rich among you ..."

This verse emphasizes the importance of equitable distribution of wealth so that economic benefits are not only enjoyed by a few people or certain groups. In the context of industrial agglomerations, this principle can be applied by ensuring that industrial growth not only benefits large capital owners, but also has a positive impact on the wider community, including the surrounding workforce and small and medium enterprises (SMEs).

Industrial agglomerations aligned with Islamic values must be able to create economic equity through job creation, increased competitiveness of local businesses, and equitable access to resources and technology (Nasution, 2020). If the industry is concentrated only in certain areas without regard to the welfare of the surrounding community, it will risk creating economic inequality, which is contrary to the value of justice in Islam. Therefore, industrial development policies must promote the principles of social justice and shared prosperity, as taught in Surat al-Hashr verse 7.

Industrial agglomerations, if managed according to the right principles, can significantly reflect the implementation of Maqāṣid al-Sharīah (the goals of Islamic law), particularly in the aspects of ḥifẓ al-māl (protection and development of wealth) and ḥifẓ al-'ird (protection of dignity and dignity). Agglomerations create an environment conducive to economic growth, allowing companies to innovate, increase production and create added value, which in turn protects and develops the wealth of the people. In addition, by providing stable and dignified employment, agglomerations contribute to the protection of the dignity and dignity of the individual. Fair Work and a safe work environment allow everyone to meet their basic needs, contribute to society, and live life with honor. Therefore, agglomerations can be an important instrument in achieving the goals of Sharia for material and spiritual well-being.

Existing research on industrial agglomerations, especially in non-Javanese regions such as Sumbagsel (southern Sumatra), still has significant gaps, especially in integrating Islamic Economic Perspectives. Although some studies may have analyzed the influence of employment and the manufacturing industry sector on agglomerations, they generally do not explore their implications from the point of view of Islamic values. This means that important aspects such as distributive justice, holistic well-being (falah), ethical business practices, as well as the role of zakat and Waqf in supporting the sustainability of agglomerations, are often overlooked. There has been no in-depth exploration of how the principles of Islamic economics can provide a unique framework for analyzing and optimizing the impact of agglomerations on local communities and economies in Sumbagsel, beyond conventional economic metrics. This gap opens up great opportunities for more comprehensive and contextually relevant research.

This study aims to analyze in depth the influence of employment and the development of the manufacturing industry sector on the phenomenon of industrial agglomeration in the southern part of

Sumatra (Sumbagsel). Unlike the previous study, this study explicitly integrates the perspective of Islamic economics as its analysis framework. Thus, we seek not only to identify the driving factors of agglomeration empirically, but also to evaluate the extent to which the practice of industrial agglomeration in Sumbagsel is in line with the principles of the Maqāṣid al-Sharīah, such as the ḥifẓ al-Ma'l and the ḥifẓ al-'irī. The results of this study are expected to provide more comprehensive and sustainable policy recommendations for industrial development in Sumbagsel, which are not only oriented to economic growth, but also to social justice and the welfare of the people in accordance with Islamic values.

## 2. METHODS

This study uses quantitative methods involving calculations, formulas, and numerical data in the process of planning, processing, hypothesis formation, analysis, and conclusion. Quantitative methods utilize numbers as the primary analytical tool. With this approach, conclusions are obtained based on numerical data and exact information to answer the research hypothesis. The quantitative approach is used to analyze the effect of the independent variable, namely employment and the manufacturing industry sector, on the dependent variable, namely industrial agglomeration.

Data analysis used in this study is a regression panel data. This method combines cross-section and time-series data, so as to provide more complete and accurate analysis results. With panel data regression, the influence of the independent variable on the dependent variable can be analyzed in more depth, both in terms of variation between research objects and changes over time. to see the direction and magnitude of influence between variables. In addition to using a quantitative approach, in this study the analysis will relate the findings from the perspective of Islamic Economics, where in the perspective of Islamic economics the goal is to understand and describe the results of research based on sharia principles. This is very important because it provides a different and more comprehensive point of view in interpreting the results of the study. This study seeks to explain the effect of the independent variable of the dependent variable

This study also uses multiple linear regression analysis, regression analysis is a statistical technique to examine and model the relationship between variables. This analysis consists of two components that are interconnected, namely the independent variable and the dependent variable. A simple linear regression Model is a model of one variable x connected to the variable y in a straight line.

In theory the multiple linear regression model is described by the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_{\dots} X_{\dots} + e_t$$

Y = Variabel Terikat (Dependen Variabel)

X<sub>1</sub> , X<sub>2</sub> = Variabel Bebas (Independen Variabel)



$\beta_0$  = Konstanta  
 $\beta_1, \beta_2$  = Parameter  
 $\epsilon_t$  = error term.

### 3. FINDINGS AND DISCUSSION

#### Findings

In the panel data regression analysis, there are three main approaches that can be used for estimation, namely Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The selection of the most suitable model was carried out through a series of tests, namely the Chow Test and the Hausman test. The Chow Test is used to determine whether a Common Effect Model or a Fixed Effect Model is more appropriate. Meanwhile, the Hausman test is used to choose between Fixed Effect Model and Random Effect Model based on the consistency and efficiency of estimation. The combination of these two Tests helps ensure that the model used is able to describe the relationship of variables accurately and in accordance with the characteristics of the data.

#### CEM (Common Effect model)

The first step in the data processing process using CEM is to combine the entire data time series and cross section directly. After that, the model is estimated with the OLS approach to obtain results that describe the relationship between independent and dependent variables in general without regard to specific variations between entities or time periods. The result of data processing with Common Effect Model is shown as follows.

Variable	Coefficient	T-Statistics	Probability
C	380373.2	13.17972	0.0000
PTK	-11019.68	-11.76205	0.0000
SIM	26.04496	9.083281	0.0000
R-Squared	: 0.772638		
F- Statistics	: 71.36375		
Prob (f- Statistics)	: 0.000000		

Table 1.1 output results E-views 10, data processed

#### FEM (Fixed Effect model)

This Model allows for dummy variables that represent those differences. Estimation is done by using Least Square Dummy Variable (LSDV) method or by within effect transformation technique. The estimated results of the FEM can provide more detailed and accurate information than the CEM, because it takes into account the unique variations in each entity.

The following are the results of data processing with a Fixed Effect Model approach to be compared with the results of the Common Effect Model.:

Variable	Coefficient	T-Statistics	Probability
C	49.85237	0.669060	0.5075
PTK	17.27051	1.089087	0.2830
SIM	-3.509132	-0.376555	0.7086
R-Squared	: 0.934376		
F- Statistics	: 90.17535		
Prob (f- Statistics)	: 0.000000		

Table 1.2 output results E-views 10, processed data

### Uji Chow

Effects Test	Statistic	d.f.	Prob.
Cross-section F	23.413597	(4,38)	0.0000
Cross-section Chi-square	55.916733	4	0.0000

Table 1.3 output results E-views 10, processed data

Based on the results of the Chow Test shown in the table, the probability value (Prob) cross-section Chi-square and Cross-section F of 0.0000 (less than 5%). Thus, the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted. This shows that the more appropriate estimation model used in panel data regression is the Fixed Effect Model (FEM).

Because the results of the Chow test show that FEM is more suitable than the Common Effect Model (CEM), the next step is to perform the Hausman test to determine whether the model that is more appropriate to use is the Fixed Effect Model (FEM) or Random Effect Model (REM). Before carrying out the Hausman test, regression is done first by using the Random Effect Model (REM) approach to obtain the estimated results as a basis for testing.

### REM (Random Effect Model)

After the Chow test, the data were processed using Random Effect Model (REM) method to be compared with Fixed Effect Model (FEM). Here are the results of data processing using Random Effect Model.

Variable	Coefficient	T-Statistics	Probability
C	259169.0	7.886151	0.0000
PTK	-6408.585	-6.362145	0.0000
SIM	15.67642	4.627632	0.0000
R-Squared	: 0.314301		
F- Statistics	: 9.625666		
Prob (f- Statistics)	: 0.000362		

Table 1.4 output results E-views 10, processed data

## Uji Hausman

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	52.699852	2	0.0000

Table 1.5 output results E-views 10, data processed

Based on the Hausman test shown in the table, the probability value is 0.0000 (less than 0.05). This means that  $H_0$  is rejected and  $H_a$  is accepted, so the most appropriate model used for panel data regression is the Fixed Effect Model. The Fixed Effects Model better reflects the realities of industry and the workforce in the South Sumatra (Sumbagsel) region because of its ability to control the unique and unobservable characteristics of each location or time period that may affect industrial agglomerations. For example, factors such as the quality of specific infrastructure in each province, different local government policies, or even the dynamics of work culture that varies between regions in Sumbagsel, can have a significant impact but are difficult to measure directly. By accounting for these fixed effects, the model can isolate the true influence of employment and the manufacturing sector, minimizing the bias of those unobserved variables. This approach allows for a more accurate and relevant analysis of field conditions in Sumbagsel, resulting in more robust conclusions about the drivers of industrial agglomeration in the region.

## Classical Assumption

A classical assumption is a set of ideal conditions that a linear regression model must meet in order for the resulting parameter estimates to be valid, efficient, and unbiased.

## Multicollinearity Test

Multicollinearity test is a statistical procedure for detecting the presence of high linear correlations between independent variables in regression models, which can lead to unstable and unreliable estimation of coefficients.

Variable	PTK	SIM
PTK	0,875322	0.634733
SIM	0,634733	0,875322

Table 1.6 output results E-views 10, processed data

Based on the results of the multicollinearity Test, states that the correlation value must be smaller than 0.90. If it is less than 0.90 then it is declared free from multicollinearity or passes the multicollinearity test.

### Heteroskedasticity Test

The heteroscedasticity test is a statistical procedure for detecting whether the residual variance in a regression model is not constant across the range of values of the independent variable.

Variable	T-Statistics	Probability
C	3.2081	0,0026
PTK	-2,326	0,0549
SIM	1.1185	0,2124

Table 1.7 output results E-views 10, processed data

Based on the results of the heteroscedexity test in the table above, in the commonly used panel data, namely hetero regresid, the standard Probability value is  $> 0.05$ . It can be seen that the Probability value of PTK and SIM  $> 0.05$  is free from heteroscedasticity test.

### Regression Analysis

Based on the results of the Chow Test and Hausman test, the most appropriate panel data regression model for this study is the Fixed Effect Model. Here are the regression results obtained using the model.

Variable	Coefficient	T-Statistics	Probability
C	49.85237	0.669060	0.5075
PTK	17.27051	1.089087	0.2830
SIM	-3.509132	-0.376555	0.7086
R-Squared	: 0.934376		
F- Statistics	: 90.17535		
Prob (f- Statistics)	: 0.000000		

Table 1.8 output results E-views 10, processed data

Based on the regression results of the Fixed Effect Model shown in the table, a regression equation was obtained that describes the relationship between the dependent variable (industrial agglomeration) and the independent variable (employment and manufacturing industry sector) as follows:

1. Based on the table above, the magnitude of the constant is 49.8. This shows that if the independent variable (employment (PTK), manufacturing industry sector (SIM) is 0, then the level of industrial agglomeration is 49.8.
2. The value of the coefficient of employment is 17.2 and has a positive sign. This shows that every increase in employment by 1%, the level of industrial agglomeration will increase by 17.2%

3. The coefficient value of the manufacturing industry sector is -3.5 and has a negative sign. This shows that every decrease in the manufacturing industry sector by 1% , the level of industrial agglomeration increases by -3.5%

## HYPOTHESIS TEST

### Coefficient Of Determination (R-Square)

The coefficient of determination (R<sup>2</sup>) is a statistical measure that indicates the proportion of variance in the dependent variable that can be described by the independent variable in the regression model.

R-Squared	: 0.934376
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*Table 1.9 output results E-views 10, processed data*

R-squared test is used to measure the extent to which the independent variable is able to explain the variation in the dependent variable. Based on the results of regression with Fixed Effect Model, R-squared value obtained is 0.934376. This means that 93.43% of the variations in industrial agglomerations can be explained simultaneously by the variable employment and the manufacturing industrial sector, while the remaining 6.57% are influenced by other factors not included in the study. Although the value of R-squared shows a high relationship, in fact the independent variables in this study only have a limited influence on the dependent variable, because of the two variables tested,

### F test results

The F-test is a statistical test used to determine whether two populations have the same variance or to test the overall significance of a multiple linear regression model.

F- Statistics	: 90.17535
Prob (f- Statistics)	: 0.000000

*Table 1.10 output results E-views 10, data processed'*

The F test is performed to determine whether the independent variables jointly affect the dependent variable. In this study, hypotheses were tested. Based on the table of test results, the F-statistic value obtained is 90.17535 with a probability of 0.0000 which is smaller than 0.05. Thus, the alternative hypothesis (H<sub>a</sub>) is accepted. This shows that the variables of Labor absorption and the manufacturing industry sector simultaneously have a significant influence on industrial agglomeration.

### T test results

A t-test is a parametric statistical test used to compare the mean of two groups of samples to determine if there is a significant difference between them.

Variable	Coefficient	T-Statistics	Probability
C	49.85237	0.669060	0.5075
PTK	17.27051	1.089087	0.2830
SIM	-3.509132	-0.376555	0.7086

Table 1.11 output results E-views 10, processed data

Statistical t-test was conducted to determine the presence or absence of influence between each independent variable to the partially dependent variable. T test results can be interpreted as follows :

#### a. Absorption Of Labor

Based on the results of the t-test shown in the table above, the T-statistic value of Labor absorption is 1.089087 with a positive direction and the value of Labor absorption prob is 0.2830 which means  $> 0.05$ . Hypothesis for employment in this study is if the value of Prob  $> 0.05$  then  $H_0$  rejected if the value of Prob  $< 0.05$  then  $H_a$  accepted.

Based on the above information shows that  $H_a$  accepted and rejected  $H_0$ . It can be concluded that the absorption of Labor does not have a significant positive effect on industrial agglomeration

#### b. Manufacturing Industry Sector

Based on the results of the t-test shown in the table above, the T-statistic value of the manufacturing industry sector is -0.376555 with a negative direction and the prob value of the manufacturing industry sector is 0.7086 which means  $> 0.05$ . Hypothesis for the manufacturing industry sector in this study is if the value of Prob  $> 0.05$  then  $H_a$  rejected if the value of Prob  $< 0.05$  then  $H_a$  accepted. Based on the above information shows that  $H_a$  rejected and accepted  $H_0$ . It can be concluded that the manufacturing industry sector does not have a significant negative effect on industrial agglomerations.

### Discussion

#### a. The effect of employment on industrial agglomerations in 2015 – 2023

Based on the results of the t-test shown in the table above, the value of T-statistics of Labor is 1.089087 with a positive direction and the value of Labor absorption test is 0.2830 which means  $> 0.05$ . Hypothesis for employment in this study can be concluded that the employment of positive but not significant effect on industrial agglomeration. Based on this study, the available and abundant labor can reduce operational costs such as lower recruitment costs because there is a lot of available labor, companies do not need to spend a lot of time and money to find the right Labor, speed up the production process, and improve business efficiency.

In the theory of Labor density. If Labor density has passed the saturation level, then labor productivity shows signs of declining (Papilaja et al., 2024). This is due to the fact that in the project site where a number of workers work, there is always a rush of people, noise accompanying equipment movements. The higher the number of workers per area, the busier the activities in the area, will eventually reach a point where the smoothness of work is disrupted and lead to a decrease in productivity (Suharyanto & Erfanto, 2020).

In addition, the high employment reflects an increase in the skills and readiness of local human resources, which further encourages the creation of industrial agglomerations, namely the gathering of various companies in one area to support each other in terms of production, distribution, and innovation (Parera, 2018). This phenomenon is in line with the government's strategy in developing integrated industrial zones and strengthening connectivity between regions, the higher the number of workers per area, the busier the activities in the area.

This is confirmed by previous studies. According to (Sabatina, 2021), the absorption of labor in industrial agglomerations shows a positive, but not significant, influence. When an area is able to absorb large amounts of Labor, this becomes an attraction for industry players to open or expand their business in the region.

#### **b. The influence of the manufacturing industry sector on industrial agglomerations in 2015 -2023**

Based on the results of the t test shown in the table above, the T-statistic value of the manufacturing industry sector is -0.376555 with a negative direction and the prob value of the manufacturing industry sector is 0.7086 which means  $> 0.05$ . The hypothesis for the manufacturing industry sector in this study is that the manufacturing industry sector has a negative and insignificant effect on industrial agglomeration.

Growth Pole is a collection of industrial industries that can drive economic development in a region because these industries have links to the front (forward linkage) and links to the back (backward linkage) (Qibti & Hendarto, 2020). The theory shows that the occurrence of economic development in a region due to the presence of industries that are able to stimulate other industries to develop. Thus, there will be dynamic economic relations to trigger various economic activities that are able to create new jobs and increase people's income (Juliana et al., 2023).

This negative influence occurs because the development of the current manufacturing sector is not always centralized in one region, but spreads to various regions. This can be due to factors such as the high cost of renting land in industrial centers, congestion, or lack of infrastructure support in agglomerations, so companies choose other, more efficient locations. In addition, the government may not yet have a consistent policy to encourage the concentration of industries in one particular region, so

the development of the manufacturing sector does not encourage the formation of agglomerations in a natural way (Hendarmin, 2019).

This is in line with previous research on the influence of the manufacturing industry sector on industrial agglomerations in Central Java province, it was found that the industrial sector does not have a significant negative effect on industrial agglomerations (Ilham Windu Purwoko, 2023). If the manufacturing industry is evenly distributed in the absence of concentration in a certain territory, then industrial agglomerations are not formed, which can explain the insignificant negative influence.

**c. The effect of Employment, Manufacturing Industry Sector on industrial agglomeration in 2015 – 2023**

Based on the table of test results, the F-statistic value obtained is 90.17535 with a probability of 0.0000 which is smaller than 0.05. Thus, the alternative hypothesis ( $H_a$ ) is accepted. This shows that the variables of Labor absorption and the manufacturing industry sector simultaneously have a significant influence on industrial agglomeration. Based on the agglomeration theory, the absorption of Labor and the development of the manufacturing industry sector have a significant influence on industrial agglomeration. Agglomeration theory (Syah et al., 2023) states that industries tend to be concentrated in regions that have abundant labor, ease of access to suppliers and consumers, and faster-growing innovations. With the increase in labor absorption in the manufacturing industry sector, the mobility of workers to industrial areas is getting higher, which ultimately accelerates the process of industrial agglomeration (Agustin et al., 2021).

The manufacturing industry sector acts as a catalyst in the formation of industrial clusters (Elmawati et al., 2023). Its existence attracts more businesses, suppliers, and service providers who are connected in the industrial supply chain. The more developed the manufacturing industry, the higher the attractiveness of a region for investment and labor, thus promoting an increase in industrial agglomerations (Intan Roidayanti et al., 2025). This effect is even stronger when the manufacturing industry sector is developing rapidly and is able to absorb large amounts of Labor, since the combination of these two factors will accelerate the formation of concentrated industrial centers.

When a region is able to absorb large amounts of Labor, companies tend to be interested in opening or moving their business to the area because there are sufficient human resources (Bairizki, 2020). The availability of this workforce is a major attraction for the industry as it can reduce the cost of recruitment and training. In addition, the abundant labor also creates a large local market, which in turn strengthens the industrial ecosystem of the region.

On the other hand, the manufacturing industry sector has an important role in encouraging the formation of industrial agglomerations due to its labor-intensive nature and requires a wide range of



production inputs, distribution and support services (Malik, 2018). The more developed the manufacturing sector in an area, the need will arise to supply raw materials, logistics services, as well as other support services, which are usually developed by other companies in adjacent locations. This creates a chain effect that strengthens the concentration of industries in one area. In other words, the growth of the manufacturing sector and the high absorption of Labor support each other in creating a centralized industrial environment, thus strengthening the agglomeration process.

Previous research supports this argument. Study by (Riyadi et al., 2021) found that the absorption of labor in the manufacturing sector contributes positively to the concentration of industry on the island of Java. Meanwhile, research (FITRIANI, 2023) shows that the growth of the manufacturing industry sector increases investment attractiveness and accelerates the agglomeration process in Sumatra. (Mubyarto & Sohieben, 2020) it also concluded that the workforce and the development of the manufacturing industry play a significant role in the formation of industrial clusters in various regions in Indonesia. Thus, based on economic theory, empirical evidence, and previous research, it can be concluded that the absorption of Labor and the development of the manufacturing industry sector have a positive and significant effect on industrial agglomeration in Sumbagsel in 2015-2023.

#### **d. Industrial Agglomeration In Islamic Economic Perspective**

Man is the Caliph on Earth, Islam views that the earth with all its contents is the mandate of Allah SWT to the caliph in order to be used as well as possible for the common welfare (Syaripudin et al., 2023). To achieve this sacred goal, Allah SWT gave guidance through his messengers. The guidance includes everything that humans need both aqidah, morality, and Sharia. Likewise, in economics, humans are commanded by Allah SWT so that all economic activities carried out can bring good problems for themselves and others (Humairoh, 2021). In industry, the production process in economics can be interpreted as activities that create benefits (Utility) both in the present and in the future. While the purpose of production is to provide goods and services that provide maximum mahslahah for consumers.

The production process of cooperative efforts among members of society to produce goods and services for their economic well-being (Nurjannah, 2023). The value of brotherhood if applied to the economic environment, will give birth to an environment of cooperation, not competition, wider dissemination or ""socialization of the means of production"" not the concentration or exploitation of natural and human resources further. The word of Allah SWT in the Qur " an Surah (Al-Baqarah : 22) :

لَّذِي جَعَلَ لَكُمُ الْأَرْضَ فِرَاشًا وَالسَّمَاءَ بِنَاءً وَأَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجَ بِهِ ۖ مِنَ الثَّمَرَاتِ رِزْقًا لَّكُمْ فَلَا تَجْعَلُوا لِلّٰهِ أَنْدَادًا وَأَنْتُمْ تَعْلَمُونَ

"It is he who has made the Earth a bed for you and the sky a roof, and it is he who sends down

water from the sky, and produces with it fruits for you. So do not set up rivals to Allah while you know”.

In the perspective of Islamic economics, the finding that employment and the manufacturing industry sector simultaneously have a significant effect on industrial agglomerations in Sumbagsel, although the partial effect is not significant, indicates the importance of a holistic approach. This is in line with the principles of Maqāṣid al-Sharīah, in particular ḥifẓ al-māl (protection and development of wealth) and ḥifẓ al-'irī (protection of dignity and dignity). When Labor absorption and manufacturing growth occur simultaneously in agglomerations, this not only creates economic value but also opens dignified employment, ensures a more equitable circulation of wealth, and improves the well-being of the community. These results suggest that industrial development efforts in Sumbagsel should focus on creating an integrated ecosystem, where the growth of the manufacturing sector is accompanied by an increase in the quality and quantity of Labor absorption, so that the agglomeration formed really brings maximum problems for the wider community.

#### 4. CONCLUSION

From the results of this conclusion, it is concluded that in each variable the absorption of Labor has a positive but not significant effect on industrial agglomeration. The manufacturing industry sector has a negative and insignificant effect on industrial agglomerations, and the simultaneous absorption of Labor and the manufacturing industry sector have a significant effect on industrial agglomerations. Man as a caliph on Earth carries the mandate of Allah SWT to manage everything in it for the common welfare, guided by his guidance in the faith, morals, and Sharia. In economic activity, including industry, Islam emphasizes the importance of achieving *maslahah* (benefit), both for oneself and others, through production processes that create maximum benefits. In line with this principle, Mannan emphasized that production should be based on cooperation and brotherhood, not competition or exploitation, promoting the equitable distribution of natural and human resources, in accordance with the word of God in the Qur'AN. Al-Baqarah: 22 who affirms his power in providing sustenance from the Earth.

This research provides an important contribution in understanding the dynamics of industrial agglomeration in Sumbagsel, a region experiencing rapid manufacturing growth. Although it shows that employment has a positive but not significant effect and the manufacturing industry sector has a negative and not individually significant effect on agglomerations, the key finding is the simultaneous influence of both significant effects on industrial agglomerations. This implies that the interaction between increased employment and manufacturing expansion collectively drives the formation of industrial clusters. Based on these results, it is recommended that local governments and industry

stakeholders in Sumbagsel formulate more integrated policies. The focus should be on creating an environment that supports simultaneous growth between the absorption of qualified labor and the diversification of the manufacturing sector. This can be achieved through coordinated incentives for workforce training, the development of industry-supporting infrastructure, and the promotion of investments that foster linkages between sectors, thereby maximizing the benefits of agglomeration and fostering sustainable economic growth in the region.

This research is very relevant to be developed further by looking at industrial agglomerations from different aspects, such as infrastructure quality, industrial diversity, availability of local raw materials, or local government policy incentives. In addition, the study could also expand the research area not only in the Sumbagsel region, but also compare it with other regions in Indonesia to see whether the agglomeration patterns are similar or different. This comparative approach can provide a more comprehensive picture of how labor and the manufacturing industry sector form industrial centers in different regions.

In terms of Islamic economics, this research can be continued by exploring how principles such as economic justice, equitable income distribution, and strengthening the real sector play a role in forming sustainable industrial agglomerations. With this approach, the research not only contributes to the regional economic literature, but also reinforces the relevance of Islamic Economics in the context of industrial development and employment in Indonesia.

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