

LABOR FORCE PARTICIPATION TRENDS: DOES SOCIO-DEMOGRAPHIC MATTERS? STUDY CASE IN BREBES DURING 2011-2023

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Abstract

Brebes Regency is the regency with the largest population in Central Java. This regency faces major challenges in the employment sector, namely the condition of the Labor Force Participation Rate (LFPP) which is in the third lowest position among regencies/cities in Central Java. The low LFPP figure shows that many working-age residents are not absorbed in economic activities. The situation is worsened by the alarming rate of joblessness, which ranks second only to Tegal City, and the poor Human Development Index (HDI) ranking in Central Java. The main objective of this research is to examine the patterns and factors that impact the involvement of the workforce in Brebes Regency from 2011 to 2023. Employing a quantitative method, this research seeks to identify how sociodemographic elements influence labor force participation in Brebes Regency. Multiple linear regression analysis was utilized in this study to examine the connection between variables by employing SPSS software. The regression results indicated a significance level of 0.001 and an F value of 14.202. These findings suggest that sociodemographic factors collectively play a significant role in influencing labor force participation in Brebes Regency. Partially, the sociodemographic factor that has the highest significant influence is the HDI. Based on these findings, improving the quality of education and health is the government's main focus so that workforce participation can be more optimal. Thus, it is hoped that the high population can be utilized to increase regional development in Brebes Regency which is reflected in the high level of workforce participation.

Keywords: Labor Force Participation Rate, Population, Unemployment Rate, Human Resources Development, Human Development Index

INTRODUCTION

Brebes Regency is one of the westernmost regencies in Central Java Province, directly bordering West Java Province. The area in Brebes Regency consists of the coast in the north, urban areas in the central part, and mountains in the south. Shallots are the largest commodity in Brebes Regency and even in Indonesia. In addition to others such as horticulture, corn, rice are also the mainstay of the economy in this area. Brebes Regency also has other advantages, namely strategic transportation access, including the Trans-Java Toll Road, making this regency have good connectivity on land routes. Sumaryoto (2018), stated that the construction of toll roads contributes to increasing efficiency in the

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transportation of goods because travel time can be faster. This time efficiency has an impact on reducing transportation costs, so that it can increase the added value of various commodities, one of which is agricultural products. In addition, Brebes Regency is also passed by the main railway line, then supported by a bus terminal that connects various areas between cities and provinces. Keypour et al. (2017) stated that the railway line construction has influenced the local community's behavior, particularly affecting their transportation choices and social connections. The presence of railway infrastructure increases accessibility, which ultimately creates economic and social opportunities for the community in the area. This condition certainly contributes to the overall development of the region in Brebes Regency.

Another facility owned by Brebes Regency is the Nusantara Fisheries Port (PPN). This port is the center of activities and distribution of marine products that can be utilized by the local community. Farida (2013) emphasized that the importance of accessibility cannot be underestimated when it comes to the growth of a specific area. The results of the study showed that areas with better accessibility tend to have higher socio-economic conditions compared to areas with limited accessibility. Sumadi et al. (2017) added that the level of development in a region is strongly influenced by its degree of accessibility. Regencies with good accessibility generally experience faster growth compared to regencies with limited accessibility.

Ease of access to various regions, both from land and sea, makes Brebes an attractive location for investment, including investment in the manufacturing, logistics, and export-based agriculture sectors. One example of investment in Brebes Regency is the development of the Brebes Industrial Area as a new economic center in Central Java. If infrastructure development continues to be carried out optimally, Brebes Regency has a great opportunity to develop rapidly into an industrial and trade area in the future.

Based on this explanation, the importance of accessibility in influencing the growth of a region is widely recognized. In addition, a large population also contributes to regional growth. This is in accordance with classical economic theory that labor plays a major role besides capital. According to BPS data, the population of Brebes Regency is ranked highest compared to other regencies/cities in Central Java province. This large population can be used as important capital for regional development. Brebes has immense potential for growth in industrial, agricultural, and service sectors due to the abundant human resources available from its large population.

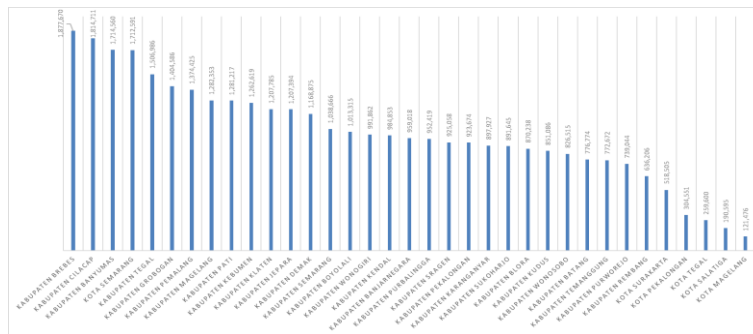


Figure 1. Average Population of Districts/Cities in Central Java Province 2014-2023

Source: Central Bureau of Statistics (processed by author, 2025)

Wardhana et al. (2020) stated that changes in population have a significant impact on economic growth, which will ultimately contribute to development efforts in a region. Panjaya and Mubaraq (2023) added that an increase in population can have a major impact on the economic growth of a region. A high workforce is a plus point where it can play a role in attracting investment so that it can ultimately drive regional economic growth. However, it is necessary to improve the quality of the workforce, including through the quality of education and skills so that this potential can be utilized optimally.

Based on the explanation above, it can be seen that Brebes Regency has great potential, such as high accessibility and a large population, but in reality, the level of community welfare is still very low. This can be seen from the Human Development Index (HDI) value which is ranked lowest in Central Java Province in the average of the last 10 years (2014-2023), Brebes is in last place (36 out of 36 districts/cities) in the Human Development Index (HDI) in Central Java. This condition shows that economic growth indicated by good accessibility and a high population has not been optimized because welfare is still low.

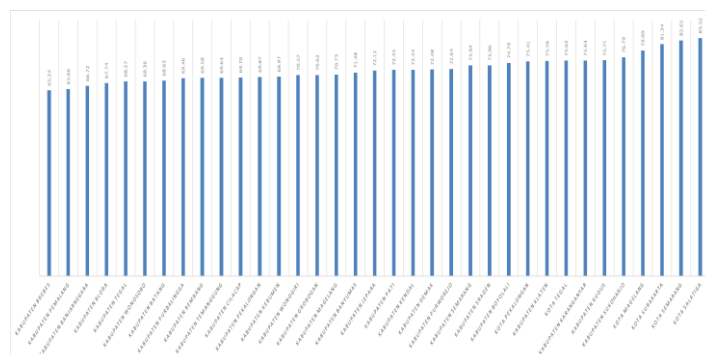


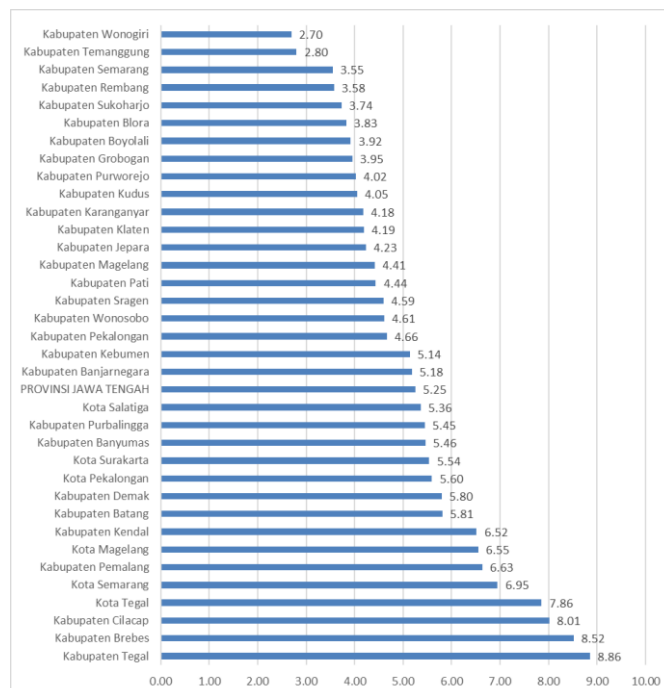
Figure 2. Average Human Development Index of Regency/City in Central Java Province 2014-2023

Source: Central Bureau of Statistics (processed by author, 2025)

The HDI provides an overview of the level of community welfare as seen through education, health, and economic indicators. The HDI can also be used to see the extent to which the population can contribute to development in an area. A high population but not accompanied by a high HDI value is a regional development problem that must be resolved. A low HDI value indicates that the level of community welfare and quality of life is also still low. Prasetyoningrum and Sukmawati (2018) in their research stated that increasing the Human Development Index has a significant impact on reducing poverty rates which can ultimately contribute to the development of a region.

The low HDI in Brebes Regency reflects the poor quality of life of the community so that regional productivity and competitiveness are also affected. The low level of education can hinder the development of productive human resources, while the low life expectancy reflects challenges to regional health services. The potential to impede investment and economic development, as well as exacerbate social issues like poverty and joblessness, exists in situations of low HDI levels. Hartini (2017) found that the HDI had a negative and significant effect on income inequality. This means that when the HDI increases, income inequality tends to decrease, which ultimately makes a region more attractive for investment for investors. Therefore, integrated and joint efforts are needed for all stakeholders to increase the HDI value by improving the quality of education and health services so that the welfare of the Brebes community increases as a whole.

Not only the HDI, Brebes also faces other problems, namely the high rate of open unemployment. Sukirno (1995) said that unemployment presents a significant challenge that adversely affects both the economy and the well-being of the general public. A high rate of unemployment has the capability to impede the progress of economic growth and the advancement of a particular area. Frisnoiry et al. (2024) in his research also highlighted how high unemployment can hinder regional development in Indonesia. Based on BPS data in the last 10 years (2014-2023), Brebes is ranked 35th out of 36 districts/cities in Central Java, after Tegal Regency.



**Figure 3. Open Unemployment Rate of Regency/City in Central Java Province
2014-2023**

Source: Central Bureau of Statistics (processed by author, 2025)

High unemployment rates will have a direct impact on development in a region because the existing population is not productive. One of the impacts is an increase in poverty rates as a result of reduced sources of income for the community. In addition, social problems can also arise as a result of high unemployment rates, including increasing crime rates, economic inequality, and high rates of urbanization to other regions. From an economic perspective, local economic growth is hampered by low purchasing power. Moreover, the industrial and manufacturing sectors are also affected by the lack of skilled workers. Sugiyanto (2006) in his research stated that unemployment has many impacts on local governments, including declining economic growth due to reduced government tax revenues, resulting in loss of income and community skills, and causing social and political instability.

The engagement of workers in different fields significantly influences the progress of a locality, particularly in fueling financial advancement by boosting productivity. The high level of workforce involvement reflects that human resources have productivity and are able to play a role in increasing regional income. In addition, an optimal level of workforce participation also plays a role in reducing unemployment. Amna (2004) in his research stated

that LFPP has a significant influence on the GRDP of a region, because it can support regional economic growth. Based on data from the Central Statistics Agency, the Labor Force Participation Rate (LFPP) in Brebes Regency during the period 2014 to 2023 tends to be stable at around 66% and is the lowest compared to other regencies/cities in Central Java Province.

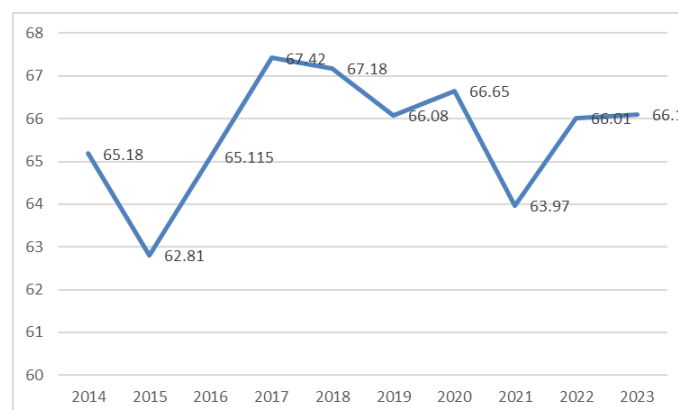


Figure 4. Labor Force Participation Rate in Brebes Regency 2014-2023

Source: Central Bureau of Statistics (processed by author, 2025)

Nilasari and Amelia (2022) stated that increasing LFPP can contribute to regional development by reducing income inequality. If the quality of human resources improves and economic growth becomes more inclusive, this scenario could occur. Izzah and Budiantara (2020) added that employment policies play an important role in increasing workforce participation so that it can encourage more equitable economic development.

Brebes Regency has great potential, including good accessibility and a large population. These two factors should be advantages in driving economic growth, however, the reality shows that the Human Development Index and unemployment are among the highest. This condition shows that the potential is not in line with the quality of adequate human resources. Therefore, efforts are needed to improve the competence and abilities of the population so that they are more competitive in the world of work.

The goal of this research is to examine how sociodemographic factors such as population size, Human Development Index (HDI), and jobless rates impact the Labor Force Participation Rate (LFPP). The results of this study can later be used as recommendations for the future development strategy of Brebes Regency, especially for the newest Regent and Deputy Regent for the 2024–2029 period. The novelty of this study lies in the specific focus on Brebes Regency which has characteristics with a large population but

low economic performance and productivity. Then the analysis of sociodemographic factors in this study is discussed in depth with a fairly long period of time. This study provides a new contribution especially for the Brebes Regency government, and Central Java province, in studying and understanding the dynamics of employment in areas with unique development challenges. And this study also provides a solution-based offer in order to increase workforce participation.

LITERATURE REVIEW

Population Size

Population size fluctuates due to births, deaths, and migration, making accurate calculation essential for development planning (BPS, 2020). Malthus (2023) highlighted the risk of exponential population growth outpacing resource availability, leading to imbalances. Population changes impact economic, social, and political structures, necessitating comprehensive statistical analysis. Smelser (2013) stressed the need for accurate population data in policy planning, while Ehrlich (2009) warned that unchecked growth could strain resources and the environment, underscoring the importance of population regulation.

Human Development Index

The Human Development Index (HDI) measures well-being through healthcare, education, and economic stability, emphasizing individual freedom and choices (Sen, 1999; Ul Haq, 1995). Unlike GDP, which focuses solely on financial metrics, the HDI provides a holistic assessment of development (UNDP, 2020). It serves as a key indicator for evaluating regional progress, policy effectiveness, and a country's classification as developed, developing, or underdeveloped. HDI is calculated using three main indicators: life expectancy (health), average and expected years of schooling (education), and adjusted Gross National Income (GNI) per capita (standard of living). These components are normalized and combined using a geometric mean to ensure a balanced assessment, preventing one factor from disproportionately influencing the overall score.

Unemployment

Unemployment refers to individuals actively seeking work but unable to secure jobs due to skill mismatches or limited opportunities (Sukirno, 2004). It serves as an indicator of economic well-being, reflecting imbalances in the labor market. Holzer (1996) noted that unemployment arises from insufficient competence or job availability, while Keynes (1937) linked it to macroeconomic imbalances specifically, a decline in aggregate demand reducing

production and labor needs. Various factors, including economic conditions, individual skills, and labor market dynamics, contribute to unemployment levels.

Central Bureau of Statistics (BPS) stated that unemployment in Indonesia is divided into several categories, including:

1. Open unemployment includes individuals who are not working and are looking for work.
2. Disguised unemployment occurs when someone works less than normal working hours but remains involved in an economic activity,
3. Seasonal unemployment is caused by unstable job fluctuations that cause instability in labor demand throughout the year, for example the agricultural sector.

Previous Research

Population and The Labor Force Participation Rate

Toossi (2006), in his research stated that the predicted labor force participation rate in the US will reach 60.4 percent in 2050, with a population estimated to reach 322.6 million people. This forecast indicates a strong correlation between population size and the number of people in the workforce. The projected number of workforces in 2050 is estimated to reach 194.8 million people.

In line with this, Prenggondani (2016) found that population has a significant positive effect on the Labor Force Participation Rate (TPAK) in West Java in the period 2007 to 2014. The discovery indicates that as the population size increases, the rate of people participating in the workforce also rises.

Hypothesis: Labor Force Participation Rate is significantly positive related to Population Human Development Index and The Labor Force Participation Rate

Faelassuffa and Yuliani (2021) in his research stated that the labor force participation rate has a significant effect on the Human Development Index (HDI), both in positive and negative directions. This shows that both an increase and a decrease in labor force participation can contribute to the HDI. This difference in impact emphasizes the complexity of the relationship between economic activity and human development.

Nashohah (2023) revealed that the impact of the labor force participation rate on the Human Development Index (HDI) is not significant, although it is negative. This discovery indicates that fluctuations in workforce engagement do not greatly affect the development of individuals in regions of East Java from 2017 to 2022.

Hypothesis: Labor Force Participation Rate is significantly negatively related to HDI

Unemployment and The Labor Force Participation Rate

Adianita et al. (2024) stated that the rate of people actively working influences the rate of people without jobs in a notable way. When more people are actively participating in the labor force, fewer people are unemployed. Moses and van der Berg (2023) identified a significant long-term correlation between the unemployment rate and labor force participation in Sub-Saharan Africa. This study confirms the importance of the role of labor force participation in influencing employment dynamics in the region.

Hypothesis: Labor Force Participation Rate is significantly negatively related to Unemployment

RESEARCH METHODS

This research employs a quantitative method involving multiple regression analysis to examine how the independent variables are connected to the dependent variables. The multiple regression method was chosen to take into account the simultaneous and partial influence of several predictors (independent). The goal is to achieve a deeper comprehension of the elements affecting the outcome being studied.

To guarantee the data's precision, this research employs SPSS software for statistical evaluation. Diagnostic checks are carried out to help verify the level of validity of the regression model and minimize estimates with potential bias.

The research design used is a time series, which covers a period of 14 years (2011-2023). The aim is to determine long-term trends, fluctuations, and the historical side of the data. This study aims to identify potential relationships or correlations, causation, and structural changes in the variables used over time.

The data collection process was carried out by the author using secondary data obtained from the Central Bureau of Statistics (BPS). The secondary data includes sociodemographic and employment information in Brebes Regency during the research period, namely 2011 to 2023. Data was obtained through official BPS publications, such as the National Labor Force Survey (Sakernas), Human Development Index (HDI), and other relevant regional statistical data and according to research needs. The data collection process involves data identification, selection, and verification with the aim of ensuring the completeness and accuracy of the information used in the research analysis.

The dependent variable in this study is the labor force participation rate, while the independent variables include key socio-demographic factors such as total population, unemployment rate, and Human Development Index (HDI). Several variables were selected

based on their theoretical and empirical relevance related to labor market dynamics. The sample used in this study is data taken by the Central Statistics Agency (BPS) in 2011-2023. The data includes comprehensive socio-demographic and employment factors.

RESULTS AND DISCUSSION

Research Results

The data used in this study comes from the Central Statistics Agency (BPS). There are several stages that need to be carried out before the regression analysis is carried out. The first test carried out is by testing several classical assumption tests, one of which is the One-Sample Kolmogorov-Smirnov Test. The test results indicate that the residual data in the regression model adheres to a normal distribution. This is evident from the significance level of 0.200, which exceeds the standard threshold of $\alpha = 0.05$.

Table 1. One Sample Kolmogorov-Smirnov Test

Unstandardized Residual		
N		13
Normal Parameters ^{a,b}	Mean	0.0000000
	Std. Deviation	46366.68685
Most Extreme Differences	Absolute	0.149
	Positive	0.102
	Negative	-0.149
Test Statistic		0.149
Asymp. Sig. (2-tailed)		^{c,d}

Test distribution is Normal; b. Calculated from data; c. Lilliefors Significance Correction; d. This is a lower bound of the significance

Source: processed by author, 2025

According to the findings of the Kolmogorov-Smirnov test presented in Table 1, it is evident that the residual data in this research follows a normal distribution, so that the assumption of the classical test, namely passing normality in the regression analysis, is fulfilled. This is an important requirement that must be met in the validity of the results of the regression analysis.

Table 2. Run Test Result

Runs Test

	Unstandardiz ed Residual
Test Value ^a	-2062.59773
Cases < Test Value	6
Cases >= Test Value	7
Total Cases	13
Number of Runs	8
Z	.022
Asymp. Sig. (2-tailed)	.982

a. Median

Source: processed by author, 2025

In addition to the Kolmogorov-Smirnov test, this study also requires a Runs Test to determine the characteristics of the data used. According to the findings of the Runs Test mentioned earlier, it can be inferred that the residual data in this research is random. This is supported by the Asymp. Sig. (2-tailed) value of 0.982, which is significantly higher than the standard significance level of $\alpha = 0.05$. Therefore, it indicates that the residual data in this study lacks a specific pattern and is distributed randomly. This finding explains that this study has good regression model validity because the random and independent residual data in the regression analysis are met.

Table 3. ANOVA Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.221E+11	3	4.071E+10	14.202	.001 ^b
	Residual	2.580E+10	9	2866492866		
	Total	1.479E+11	12			

a. Dependent Variable: TPAK

b. Predictors: (Constant), IPM, PG, JP

Source: processed by author, 2025

Based on the results of the Table 3 above, there is a significant relationship between the labor force participation rate and socio-demographic factors. This can be seen from the value of these socio-demographic variables, if analyzed simultaneously, are able to explain the dependent variable with a very high level of significance ($p = 0.001$). This shows a strong relationship value because it is below the significance of 0.05. This is in line with the theoretical framework that several socio-demographic variables play an important role and have a major influence on the labor market.

Table 4. Coefficient Analysis Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-220288.964	434706.418		-.507	.625
	PG	128.797	49.863	2.103	2.583	.030
	JP	-14.983	5.521	-2.218	-2.714	.024
	IPM	320.591	67.576	.696	4.744	.001

a. Dependent Variable: TPAK

Source: processed by author, 2025

Based on the results on Table 4 above, it can be seen that there is a partial relationship between sociodemographic variables and the level of labor force participation. The Human Development Index (HDI) variable has the strongest impact compared to other variables, with a significance level of 0.001, followed by the unemployment rate ($p = 0.03$) and population size ($p = 0.02$). This shows that the HDI, which is a reflection of the level of education, health, and standard of living, is the most important factor in increasing labor force participation. Meanwhile, other variables such as the unemployment rate and population size also play an important role, although their influence is relatively smaller. This finding shows that socio-demographic variables are closely related to labor market dynamics.

Discussion

Previous studies have shown a strong correlation between socio-demographic aspects such as population size, open unemployment, and the Human Development Index (HDI) to labor force participation. A significant increase in population to an increase in labor force participation rates, this is because the larger the population in an area means more individuals are actively seeking employment opportunities. especially for productive ages, the larger the number of young population pyramids, the higher the demand for jobs.

Statistically, this trend occurs in Brebes, an area where the agricultural sector still dominates the local economy. this sector is a labor-intensive sector so that more agricultural land can be associated with an increase in the need for workers. Employment opportunities in agriculture support high labor absorption in this sector, making it the main source of income for most of the population. another sector that absorbs a lot of labor is the marine and fisheries sector. Brebes, part of whose territory is on the northern side of Java Island, provides potential employment in this sector to become fishermen or small enterprises that require human resources as their main drivers.

Statistically, the study results show that every 100 people added to the population will increase labor force participation by 1.28%. These results highlight the importance of population growth in structuring the labor market. Population growth along with increased labor force potential has the potential to boost economic productivity if supported by appropriate policies such as job training, expanding employment opportunities, strengthening education and skills, and providing certification according to the competencies needed by the business world and industry. This is necessary so that the workforce has standardized skills and increases its bargaining power in the labor market. Related to Brebes which is still dominated by the agricultural and marine sectors, the interaction between population growth and labor absorption indicates the need for strategic intervention to diversify job opportunities outside of agriculture and marine, ensuring that various sectors can absorb more workers. Thus, population growth in Brebes can have a direct impact on increasing productivity, through channeling in labor force participation. However, to realize inclusive and sustainable development, it is necessary to actively promote the development of worker skills, improvement and expansion of infrastructure, and diversification of livelihoods or jobs. If implemented optimally, it can prevent an imbalance between employment and labor supply in the market.

Population growth is considered a catalyst for economic transformation through the development of new industries and services in accordance with the demands of community needs. This phenomenon is in line with the expansion of urban areas due to population mining, increased infrastructure and access, increased demand for goods and services, thus encouraging the creation of new jobs. Studies in Central Java observed that the workforce has a significant positive effect on economic development, which reinforces the idea that a larger workforce contributes to the regional economy.

The findings of Marois et al. (2020) show that the increase in immigration in Europe has encouraged the expansion of the labor market due to the presence of immigrants who are actively looking for work. Cuadrado et al. (2023) emphasize the composition of the population pyramid based on age on economic productivity. If the population is dominated by older workers, it can be a challenge in the long term. An aged population in the labor market can have an impact on decreasing GDP per capita and can reduce labor force participation (Bloom et al., 2010). This is reflected in Spain and OECD member countries where the dominance of the elderly population can threaten the sustainability of the labor market, although it is still substantial in supporting economic growth. In developing

countries, there are still many elderly informal workers. For this reason, appropriate policies are needed to support the optimization of the utilization of older workers so that they can contribute positively to sustainable economic development (Lai & Yip, 2022).

Something similar happened in Indonesia. Finding by Sari and Susanti (2018) proves that population growth has a positive impact on workforce participation in various regions, for example in Lhokseumawe, Riau, and West Nusa Tenggara. This study underlines the importance of policies to utilize demographic growth to increase workforce participation and support economic development.

HDI as an indicator of human development shows positive results on workforce participation in Brebes. Residents who have skills or are educated or in good health have a greater chance of finding work. This finding is in line with a study conducted by Suryadarma et al. (2005) which found a positive correlation between the quality of education and health and workforce participation in Indonesia and ASEAN (Selvia & Idris, 2022).

HDI reflects the quality of human capital, the higher the HDI, the higher its bargaining power and role in determining dynamics in the labor market. According to Nashohah (2023) HDI which is positively correlated with labor absorption will support efforts to reduce unemployment rates. Therefore, a strategic policy is needed to strengthen human capital development through investment in education, improving health quality, and empowering inclusive local economies.

Brebes Regency has a lower HDI than the average of Central Java Province, which are 67.95 and 73.39 respectively. with an average length of schooling of 6.4 years, the general population of Brebes only graduated from elementary school. By strengthening the HDI, areas such as Brebes can not only experience higher labor force participation but also more sustainable economic development and a decrease in unemployment rates.

This finding is in line with the study by Cuaresma et al. (2014) which highlights the importance of education in supporting workforce productivity while encouraging sustainable economic growth. Investment in education is positively correlated with productivity (Alghazali et al., 2022). A workforce with optimal skills and education has the knowledge and skills in accordance with the demands of a dynamic labor market, and requires efficiency and innovation in various business sectors. To increase the HDI, sustainable and strategic efforts are needed to support policies that encourage human capital development (Fadillah, 2021). A study conducted by Böheim et al. (2023) projected that expanding access to education would have a positive impact on significantly increasing workforce participation, estimated

to increase around 3 million workers in the United States labor market and 500,000 in Germany by 2060. Thus, education is considered to encourage the expansion of the workforce in industrialized countries. The positive correlation between HDI and the labor market is not only relevant in developed countries, but also in developing countries. Research conducted in South Africa (Nwosu & Woolard, 2017) and Pakistan (Rauf et al., 2018) show that increasing HDI, especially in the field of education, can support the rate participation report.

Duflo (2001) emphasized the role of inclusive education investments, targeted at women, to encourage participation in the labor market. To that end, policies are needed that prioritize equitable services in education, health, and economic opportunities across all demographic groups. This inclusive approach is not only effective in reducing inequality, but also in strengthening economic resilience by optimizing the quality of the population in the labor market (Jawhar et al., 2022).

On the other hand, research on the determinants of labor force participation in Brebes also looks at the unemployment aspect. This correlation is explained by the effect of discouraged workers, namely when individuals experience prolonged unemployment amid limited job opportunities, these individuals will leave the workforce, thereby reducing the report force participation rate. According to this study, a 1% increase in the unemployment rate results in a 14% decrease in labor market participation. Conversely, if unemployment decreases, it will be a stimulus for increasing the labor force in the market.

High unemployment rates can be an indicator of economic downturn due to limited employment opportunities and pressure on wages. In response, some individuals may choose to retire, continue their education, or shift their focus to unpaid domestic responsibilities, which can reduce the LFPR.

Previous research observing 15 districts in Central Java found a strong correlation between employment conditions and poverty and unemployment rates. The results showed that higher unemployment rates have an effect on increasing poverty, and this helplessness will hinder individuals from participating in the workforce (Saifuloh et al., 2019). In Brebes and many other areas, the phenomenon of migration to other areas can reduce labor participation, such as workers who choose to work abroad. The phenomenon of labor migration abroad underlines the need for policies that encourage job creation and economic stability to maintain local workers and increase labor market participation.

Siregar (2022) through his study, emphasized the sensitivity of minimum wage policies that can affect labor market conditions. Minimum wage policies can contribute to changes in unemployment rates, resulting in spillover effects in various surrounding areas. The tradeoff in this wage policy is caused because high minimum wages can increase welfare, but on the other hand, it can indirectly increase unemployment if there is labor cost efficiency. Thus, wage policies can affect participation in the labor market.

Discouraged worker effect hypothesis is also reviewed by Raifu and Adeboje (2022), showing correlation in labor markets of African countries. Withdrawal from the labor market will lower the LFPR rate not only in developing countries, but also in developed countries such as Canada. Janko (2023) found that unemployment rate is inversely correlated with male labor force participation, indicating that prolonged unemployment can lead to labor market withdrawal even in developed countries.

These findings generally underline the importance of inclusive and integrated employment policies between wage regulation policies, unemployment phenomena, and job availability. Governments and business sectors that play an important role in decision-making need to carefully evaluate the impact of wage adjustment policies on unemployment trends, to support sustainable labor force participation and stable economic development. Based on the explanation above, the implication of this finding is the need for an inclusive, integrated, and data-based employment policy, with a focus on sustainable workforce participation and stability of economic development. Collaboration between government, business sector, and civil society is key to achieving these goals

CONCLUSION

This study provides empirical and in-depth insights into the relationship between socio-demographic variables and labor market dynamics in Brebes Regency over the past 14 years, from 2011 to 2023. Utilization of socio-demographic potential in Brebes Regency, including a large population followed by a good level of accessibility, and large agricultural output can be used as material so that regional development can be felt by the community.

Based on the results of the study, it can be seen that the Human Development Index (HDI) variable is the most influential variable in increasing labor force participation in Brebes Regency, followed by efforts to reduce unemployment rates and manage population numbers effectively. The findings in this study are expected to be used as recommendations for the need for more targeted regional development and development policy interventions, especially for policy makers and labor market analysts. However, it should be underlined that

research data taken from secondary data, namely Central Bureau of Statistics (BPS) may not fully capture the complexity of labor market dynamics, such as the level of productivity and skills of the workforce, to jobs in the informal sector. It is expected that further research can expand the analysis by collecting primary data, looking at urban and rural differences, and exploring gender gaps. Other variables can also be added so that labor market dynamics can be explained more comprehensively.

This study also has several limitations that can be used as opportunities for further research, including: limited secondary data from the Central Statistics Agency (BPS) where even though the data is reliable, it cannot fully explain the complexity of labor market dynamics. The variables used and the year of the study are also still limited and variables and years of research can be added to find out the dynamics of the labor market. In addition, these findings are also limited to being useful only for Brebes Regency so that the results cannot be generalized compared to other areas.

It is hoped that further research, in addition to secondary data, can be supplemented with primary data, see the space for differences in labor market dynamics between urban and rural areas, and explore problems such as gender disparities. Other variables can also be added to get more comprehensive results, such as education level, migration, informal sector participation, and labor market dynamics can be explained more comprehensively.

The conclusion in this study is to provide a focus on the significant impact of socio-demographic factors on labor force participation and provide a basis for further research and policy innovation. These findings can be used as a basis for determining strategies to improve the labor market to be more integrated, adaptive, and inclusive.

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