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Effect of Tourism Sector on Poverty in Central Java Province: Application of the Chain Rule

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ABSTRACT

The purpose of this study is to evaluate the effect of the number of hotels and tourists on the PDRB of the tourism sector, as well as the impact of the PDRB of the tourism sector on poverty in Central Java Province 2015-2020. The panel data regression model was employed in this work, with the Fixed Effects Model (FEM) approach and the chain rule method in differentials. According to the findings of this study, the number of hotels and tourists have a favorable effect on the PDRB of the tourism industry, while the PDRB of the tourism sector has a negative effect on poverty. As a result, the number of hotels and tourists has a detrimental influence on poverty. As a result, the chain rule principle is demonstrated in this study.

Keywords: Poverty, panel data, Fixed Effects Model, chain rule, number of hotels, number of tourists, tourism sector PDRB.

INTRODUCTION

Tourism is one of the service and service industry activities that Indonesia relies on to improve the country's non-oil and gas foreign exchange. In essence, natural wealth, cultural arts, community traditions, and the diversity of tourism potential in the form of varied facilities possessed by the region can serve as the foundation for the growth and development of tourism, which can play an essential role in economic growth (Sutrisno, 2013). Tourism is a sector that has an impact on local development, which can help to reduce poverty (Gunadi, 2019).

Table 1. Number and Percentage of Poor People in Central Java Province in 2016-2021

Year	Number of Poor Population	
	(Thousand Souls)	(%)
2016	4506,89	13,27
2017	4450,72	13,01
2018	3897,20	11,32
2019	3743,23	10,80
2020	3980,90	11,41
2021	4109,75	11,79

Source: BPS Central Java

According to Table 1, the number and proportion of impoverished people in Central Java Province decreased from 2016 to 2021, with a surge in 2020 and 2021 owing to the Covid-19 outbreak, which led many workers to lose their jobs and income. Furthermore, the population of poor people in Central Java Province remains relatively large. This demonstrates that the people's well-being in Central Java Province still has to be addressed.

According to Table 2, the PDRB of the tourism sector in Central Java Province grows every year. However, the PDRB of the tourism industry declined in 2020 because to the Covid-19 pandemic at the beginning of the year, which led the government to enact a lockdown policy, leaving many hotels, inns, and tourist attractions empty of tourists. As a result, the tourism industry's revenue is lowered. The tourism sector's contribution will begin to improve in 2021. This is seen in the value and contribution of the tourism sector's PDRB, which has begun to rise again.

The tourist industry in Central Java Province has huge potential. This potential is supported by the presence of tourist attractions as well as the availability of lodging and tourism-related facilities. Central Java Province had 1069 tourism attractions in 2020. Not only that, but Central Java has plenty of and suitable lodging options. Also in 2020, the number of hotels in Central Java was registered at 325 star hotels and 1685 non-star hotels in 2010. (BPS Jawa Tengah, 2020).

Table 2. PDRB at constant prices for the tourism sector in Central Java province in 2016-2021

Year	PDRB of Tourism Sector	
	(Billion Rupiah)	(%)
2016	26633,47	3,14
2017	28350,13	3,17
2018	30660,79	3,26
2019	33442,26	3,37
2020	30773,74	3,19
2021	32595,12	3,27

Source: BPS Central Java

The presence of tourists, both international and domestic, has an impact on the economy of a region, if not a country. This is due to transactions that occur during the tourist's vacation. On the other side, the presence of foreign tourists will offer more foreign exchange for the countries visited. Furthermore, the longer a tourist stays in a tourist location, the higher the income of tourism sector stakeholders in that area (Rosyadi, 2022).

Table 3. Number of Hotels and Number of Tourists in Central Java Province in 2016-2021

Year	Number of Hotels	Number of Tourists
2016	1627	37.478.899
2017	1958	40.899.577
2018	2006	49.620.775
2019	2041	58.592.562
2020	2010	22.707.375
2021	2026	35.403.851

Source: BPS Central Java

According to Table 3, the number of hotels and tourists is expected to rise between 2016 and 2019. This demonstrates that the tourism industry is progressing. However, the number of tourists dropped dramatically in 2020, resulting in a drop in the number of hotels. The easing of the pandemic in 2021 has caused the tourism sector to gradually recover, as seen by an increase in the number of hotels and travelers.

Tourist travels, both local and international, fell precipitously in 2020, resulting in a dip in private consumption. According to BPS (2020), the number of international tourist visits declined by 7.6 percent in January 2020 as compared to December 2019. Domestic tourists, on the other hand, fell by 3.1 percent within the same time period (Fahrika & Roy, 2020).

The Covid-19 pandemic has had a significant impact on the tourism sector's PDRB, the number of hotels open, and the number of tourists visiting Central Java Province. Policies to increase the PDRB of the tourism sector must be implemented. The purpose of this research is to estimate the impact of the number of hotels and tourists on the PDRB of the tourism industry, as well as the impact of the PDRB of the tourism sector on poverty in Central Java Province between 2015 and 2020.

Sutrisno (2013) used panel data analysis and the Common Effects Model technique to investigate the effect of the number of tourist objects, the number of hotels, and the PDRB on tourism fees in Central Java Province from 2007 to 2011. Tourism items, number of hotels, and PDRB each district/city in Central Java were discovered to have a positive and significant effect on district/city restitution income in Central Java. The number of tourist attractions, hotels, and PDRB all have a substantial impact on economic growth.

Furthermore, Darmawan and Yunanto (2016) employed panel data regression with the Fixed Effects model in 30 Indonesian provinces from 2004 to 2012 and discovered that the number of tourists and GDP per capita had a negative effect on poverty. Then, Widiyanti and Dewanti (2017) used panel data analysis with the Fixed Effects model to analyze the effect of the number of tourist objects, PDRB, number of hotels, number of restaurants, and number of restaurants on the PAD of the DIY tourism sector from 2010 to 2015. The PDRB, the number of hotels, the number of restaurants, and the number of restaurants all had a positive and significant effect on the tourism sector's PAD in DIY, however the number of tourist objects had no effect.

Then, Adhikrisna, Hidayat, and Arifin (2016) used panel data regression with the Fixed Effects Model to investigate the effect of tourism on district/city PDRB in East Java from 2011 to 2014. It was discovered that the quantity of tourists, hotels, and restaurants had a favorable and significant effect on PDRB.

Zainuri, Priyono, and Varazizah (2021) examined the influence of tourism on poverty levels in five ASEAN countries, namely Indonesia, Malaysia, Vietnam, the Philippines, and Thailand, using panel data regression with the Fixed Effects Model technique from 2000 to 2019. It was discovered that investment, employment, and financial inclusion in the tourism sector had a negative and significant impact on poverty levels in five ASEAN countries. Meanwhile, tourist consumption has no discernible impact on poverty levels in the five ASEAN countries.

Andriyani and Salam (2022) used panel data regression with the Fixed Effects model to investigate the impact of the tourism industry on Central Java's PDRB. The number of tourist attractions, hotels, and accommodations had a positive and substantial effect on PDRB, whereas the number of restaurants and foreign tourists had a negative effect on PDRB. In the meanwhile, the number of domestic tourists has no effect on the PDRB. Then, using the same model, Rohmat and Indrawati (2022) discovered that the agricultural, manufacturing, and tourist sectors had a negative effect on poverty in Central Java from 2016 to 2020.

Laut, Sugiharti, and Panjawa (2021) investigate whether the tourist sector is crucial in the regional economic development of Central Java Province from 2013 to 2018. It was discovered that PDRB has a beneficial effect on PAD. Changes in the number of hotel and restaurant occupants also play a major influence in increasing PAD in the tourism industry. Meanwhile, the size of the population has little effect on PAD.

Sudiarta and Suardana (2016) used quantitative descriptive statistical methods to investigate the impact of tourism on poverty in the tourism areas of Tulamben, Candidasa, and Karangasem Regency in Bali. It was discovered that more than 30% of people work part-time in the tourism industry. This means that, in addition to working as fishermen, members of the village often work as escorts, porters, and souvenir salesmen at a variety of hotels and restaurants. Meanwhile, persons who make tourism their primary source of income account for 12% of the total. Tourism has indirectly helped to improve the community's economy.

Nikita, Masinambow, and Tolosang (2017) used path analysis to examine the effect of per capita income in the five most visited countries, namely Germany, England, the Netherlands, Singapore, and the United States, on the number of foreign tourists and the PDRB of the tourism sector in North Sulawesi from 2006 to 2015. Directly, per capita income has no effect on the number of foreign tourists visiting North Sulawesi, but it has a favorable effect on the tourism PDRB of North Sulawesi.

Windayani and Budhi (2017) used the path analysis method to investigate the impact of tourist visits, hotel occupancy rates, and tourist expenditure on employment and economic growth in the Province of Bali from 1998 to 2015. According to data analysis, hotel occupancy rates have a beneficial effect on employment in Bali, although tourist visits and tourist spending have little effect. Then, tourist visits have no effect on Bali's economic growth, whereas hotel occupancy rates have a negative effect and tourist expenditure has a favorable effect. Employment has a direct positive impact on Bali's economic growth.

Rewah, Kumenaung, and Rotinsulu (2021) apply the path analysis approach to investigate the influence of tourist sector development on the economy and poverty reduction in North Sulawesi Province from 2011 to 2019. It was discovered that the development of the tourism sector has a good impact on the economy of North Sulawesi. The development of the tourism industry, either directly or indirectly through the economy of North Sulawesi, has no major influence on poverty alleviation, and the economy of North Sulawesi has no significant effect on poverty alleviation.

Yudhoyono, Siregar, Achsani, and Irawan (2021) used Two-Stage Least Squares to investigate the impact of tourism on the economy and people's welfare in the West Manggarai Regency area (2SLS). Tourism was discovered to have a favorable impact on the economy of West Manggarai Regency. The bigger the PAD, employment, and PDRB in West Manggarai Regency, the longer tourists remain in Labuan Bajo.

The use of the chain rule method for function derivatives or arrangements consisting of two or more functions to estimate the effect of the number of hotels and tourists on the PDRB of the tourism sector, as well as the influence of the PDRB of the tourism sector on poverty, distinguishes this research from previous studies. As a result, this study indirectly analyzes the impact of the tourism sector on poverty in Central Java Province.

METHOD

The factors in this study are the Gross Regional Domestic Product (PDRB) of the tourism sector, the number of hotels, the number of tourists, and the percentage of poor people. Table 4 shows the details of the data on the variables in this study.

Table 4. Research Variables

Variable	Data/Unit	Source
PDRB of the tourism sector	PDRB of the sector providing accommodation and food and drink (billions of rupiah)	BPS
Hotel	Number of hotels (units)	Disporapar
Traveler	Number of tourists (people)	Disporapar
Poverty	Percentage of poor people (percent)	BPS

In this study, the chain rule will be used in differential mathematics. According to Chiang (1996), in differential there are two or more functions that can be differentiated, each with a separate independent variable, such as the following:

$y = f(z)$……(3.1)

According to Equation (3.1), the magnitude of the y value is determined by the z value. The variable z is then a function of the variable x in the following step, which may be stated as follows:

$z = g(x)$……(3.2)

According to Equations (3.1) and (3.2), the effect of x on y equals the effect of x on z multiplied by the effect of z on y, which can be represented as follows:

$\frac{dy}{dx} = \frac{dy}{dz}\frac{dz}{dx}$……(3.3)

Changes in y (dy) are dependent on changes in z (dz), and changes in z (dz) are dependent on changes in x in Equation (3.3). (dx). The results of the two functions f and g are obtained using Equations (3.1) through (3.3), indicating a multiple function (function of a function). As a result, the chain rule is also known as the rule of numerous functions or the rule of a function.

Jaya (2015) used the chain rule to investigate the relationship between education and health spending on district/city labor productivity in Central Java Province from 2007 to 2013. This study used regression to estimate the effect of education spending on average Years of Schooling (RLS), then the effect of health spending on Life Expectancy (AHH), and finally the effect of RLS and AHH on worker productivity.

This study used panel data regression, which combines cross section and time series data. The data cross section in this study is 35 regencies/cities in Central Java Province, and the time series data is from 2015 to 2020, hence the number of samples in this study is 35 x 6 = 210.

$PDRBPar_{it} = \alpha_0 + \alpha_1 JH_{it} + \alpha_2 JW_{it} + e_{it}$ .....(3.4)

$PPM_{it} = \gamma_0 + \gamma_1 PDRBPar_{it} + \nu_{it}$ .....(3.5)

$PPM_{it} = \beta_0 + \beta_1 JH_{it} + \beta_2 JW_{it} + \varepsilon_{it}$ .....(3.6)

PDRBPar	:	PDRB of Tourism Sector (billion rupiah)
JH	:	number of hotels (units)
JW	:	number of tourists (people)
PPM	:	percentage of poor people (percent)
$\boldsymbol{\alpha_0}$	:	constant Equation (3.4)
$\boldsymbol{\alpha_1}$	:	coefficient of the number of hotels in Equation (3.4)
$\boldsymbol{\alpha_2}$	:	the coefficient of the number of tourists in Equation (3.4)
$\boldsymbol{\gamma_0}$	:	constant Equation (3.5)
$\boldsymbol{\gamma_1}$	:	the tourism sector PDRB coefficient in Equation (3.5)
$\boldsymbol{\beta_0}$	:	constant Equation (3.6), which is the result of $\gamma_0 + \gamma_1\alpha_0$
$\boldsymbol{\beta_1}$	:	coefficient of the number of hotels in Equation (3.6), which is the result of $\gamma_1\alpha_1$
$\boldsymbol{\beta_2}$	:	coefficient of the number of tourists in Equation (3.6), which is the result of $\gamma_1\alpha_2$
$\boldsymbol{e}$	:	residual in Equation (3.4)
$\boldsymbol{\nu}$	:	residual in Equation (3.5)
$\boldsymbol{\varepsilon}$	:	residual in Equation (3.6), which is the result of $\gamma_0 e_{it} + \nu_{it}$
i	:	1-35 (cross-section data for districts/cities of Central Java Province)

t : 1-6 (time-series data for 2015-2020)

To guarantee the model's existence, a F test must be performed to establish whether the independent variables have an effect on the dependent variable at the same time. Because Model 2 only has one independent variable, the F test was only performed for Model 1. The H0 in the F test is the number of hotels and the number of tourists together have no effect on the PDRB of the tourism sector. H0 will be rejected if the F-statistical probability < α.

The t test must then be performed on both models to see whether the individual independent variables have a significant effect on the dependent variable under the assumption that the other independent variables remain constant. H0 t test for each model states that αi = 0 (i = 1 & 2), which means the number of hotels and the number of tourists respectively have no effect on the PDRB of the tourism sector; γ1 = 0 (PDRB tourism sector has no effect on poverty); βi = 0 (i = 1 & 2), which means that the number of hotels and the number of tourists have no effect on poverty. The HA states that αi > 0 (i = 1 & 2), which means the number of hotels and the number of tourists each has a positive effect on the PDRB of the tourism sector; γ1 < 0, which means that the GRDP of the tourism sector has a negative effect on poverty; βi < 0 (i = 1 & 2), which means that the number of hotels and the number of tourists respectively have a negative effect on poverty.

RESULT AND DISCUSSION

The panel data regression model was estimated using three approaches: the Common Effects Model (CEM), the Fixed Effects Model (FEM), and the Random Effects Model (REM) (REM). Table 5 displays the estimation results of the panel data model.

Table 5. Regression Results of CEM, FEM, and REM

Model 1: Tourism Sector PDRB Dependent Variable			
Variable	**Regression Coefficient**		
	CEM	**FEM**	**REM**
C	433,5439	660,7475	648,0452
JH	2,727945	1,549244	1,714559
JW	0,000231	8,52E-05	8,90E-05
R^2	0,34	0,98	0,27
Prob F-statistik	0,00	0,00	0,00
1) Chow test Cross-section F(34, 173) = 167,886540; Prob.F = 0,00 2) Hausman test Cross section random $\chi^2(2)$ = 6,627978; Prob χ^2 = 0,0			
Model 2: Percentage of Poor Population Dependent Variable			
Variable	**Regression Coefficient**		
	CEM	**FEM**	**REM**
C	13,57221	17,32284	15,44358
PDRBPar	-0,002174	-0,006654	-0,004409
R^2	0,12	0,89	0,17
Prob F-statistik	0,00	0,00	0,00
1) Chow test Cross-section F(34, 174) = 37,206299; Prob.F = 0,00 2) Hausman test Cross section random $\chi^2(1)$ = 11,968713; Prob χ^2 = 0,00			

After obtaining the results of the CEM, FEM, and REM regressions, two tests must be performed to find the optimum panel data estimate model. First, the Chow test was used to

assess which model was superior between CEM and FEM. Second, the Hausman test was used to assess which of the two models is superior, REM or FEM.

DISCUSSION

The Chow test was carried out to determine the best model for estimating panel data between FEM or CEM. The provisions in the Chow Test are that if the probability value of the F-statistic is > α, then H0 is not rejected, which means that the selected model is CEM to estimate panel data. Meanwhile, if the probability value of the F-statistic is <α, then H0 is rejected, which means that the FEM model is selected to estimate panel data. The Chow test findings in Table 5 demonstrate that the cross-sectional probability F for the three models is smaller than α, indicating that H0 is rejected. As a result, the Fixed Effect Model was chosen (FEM).

Hausman test was conducted to determine the best model between REM and FEM in estimating panel data. The provisions in the Hausman Test are if the probability $\chi 2 > 0.05$; then H0 is not rejected, so REM is the right model in estimating panel data. However, if the probability $\chi 2 < 0.05$, then H0 is rejected, meaning that FEM will be used in estimating panel data. The Hausman test results in Table 5 show that the probability of $\chi 2$ is less than α for both models, so that H0 is rejected, which means that the selected model is the Fixed Effects Model (FEM).

Table 6. FEM Regression Results

Model 1
$PDRBPar_{it} = 660{,}747 + 1{,}549JH_{it} + 8{,}52E\text{-}05JW_{it}$
(0,0003)* (0,0000)*
$R^2 = 0{,}98$; F-stat = 241,65; Prob. F-stat = 0,00
Model 2
$PPM_{it} = 17{,}323 - 0{,}0067PDRBPar_{it}$
(0,000)*
$R^2 = 0{,}89$; F-stat = 41,89; Prob. F-stat = 0,00

The F test is not necessary for Model 2 because model 2 is a simple regression model or only has one independent variable. Table 6 shows the probability of the F-statistic in Model 1 of 0.000 (less than α 0.05), so that H0 is rejected, which means that the number of hotels and the number of tourists together have a significant effect on the PDRB of the tourism sector. Table 6 shows the probability of the t-statistic γ1 which is less than 0.05, so it can be concluded that the GRDP of the tourism sector has a significant effect on poverty.

R^2 in Model 1 is 0.98, which suggests that 98% of the change in PDRB in the tourism sector is caused by the number of hotels and tourists, while the remaining 2% is influenced by factors outside the regression model. Meanwhile, in Model 2, the tourism sector's PDRB accounts for 89% of the change in poverty, with the remaining 11% driven by factors outside the regression.

The t test was conducted to find out whether the independent variables had a significant effect on the dependent variable individually or partially. By comparing the probability t-statistic with α, it can be seen whether each independent variable has an effect on the dependent variable. H0 in the t test states that the i-th independent variable has no real effect on the dependent variable. The results of the FEM t test are summarized in Table 7.

Table 7 illustrates that the number of hotels and tourists have a genuine and positive effect on the tourism sector's PDRB, whereas the tourism sector's PDRB has a real and negative effect on poverty. As a result, the number of hotels and tourists have a considerable and detrimental effect on poverty.

Based on the findings of computing the constants for each location, Semarang City has the highest constant value for Model 1 at 3381.989. This indicates that, in terms of the effect of the number of hotels and guests on the tourism sector's PDRB, Semarang City had the greatest PDRB from 2015 to 2020. Semarang City also has the highest constant in Model 2, which is 30.936, indicating that the percentage of poor people in Semarang City is the highest in 2015-2020 in terms of the influence of the tourism sector's PDRB on poverty. Then, Wonosobo Regency has the highest combined constant of Models 1 and 2, namely 20.554, indicating that, in terms of the influence of the number of hotels and visitors on poverty, the percentage of poor people in Wonosobo City is the highest in 2015-2020.

Table 7. Test Results t

Model 1			
Variable	**Coefficient**	**Prob.**	**Conclusion**
JH	α_1 = 1,549244	0,0003	*JH* has a significant effect on α = 0.05
JW	α_2 = 8,52E-05	0,0000	*JW* has a significant effect on α = 0.05
Model 2			
Variable	**Coefficient**	**Prob.**	**Conclusion**
PDRBPar	γ_1 = -0,006654	0,0000	*PDRBPar* has a significant effect on α = 0.05
Combined Model 1 and Model 2			
Variable	**Coefficient**		**Conclusion**
JH	$\beta_1 = \gamma_1\alpha_1$ = -0,01030867		*JH* has a significant effect on α = 0.05
JW	$\beta_2 = \gamma_1\alpha_2$ = -5,67E-07		*JW* has a significant effect on α = 0.05

The number of hotels coefficient is 1.5492, which means that increasing the number of hotels by one unit increases the PDRB of the tourist industry by 1.5492 billion rupiahs. The coefficient on the number of tourists is 8.52E-05, which means that an increase in the number of tourists by one person will result in a relatively little rise in the PDRB of the tourism industry. The tourism sector's PDRB coefficient is near to zero, which implies that if the tourism sector's PDRB increases by 1 billion rupiah, the percentage of poor people will hardly reduce, despite the fact that the coefficient is negative and statistically significant. The combined Model 1 and Model 2 produce β_1-0.0103 and β_2-5.67E-07, indicating that the influence of the number of hotels and tourists on poverty is modest when measured using the tourism sector's PDRB.

The t test results show that the number of hotels and tourists have a positive effect on the PDRB of the tourism sector in Central Java Province in the period 2015-2020, so the findings of this study are consistent with the research hypothesis and the Harrod-Domar theory, which states that investment can affect a country's economic growth. Investment in the hotel sector, particularly in tourism areas where natural tourism is frequently of interest to tourists, must be a priority scale for the development, improvement, and development of the tourism sector so that it can attract tourists to visit these tourist attractions and tourists feel comfortable with the facilities available (Subardini, 2017).

Adhikrisna, Hidayat, and Arifin (2016) discovered similar results, where the number of tourists, hotels, and restaurants had a favorable effect on the PDRB of districts/cities in East Java from 2011 to 2014. Meanwhile, Andriyani and Salam (2022) discovered that the number of tourist attractions, hotels, and lodgings had a favorable effect on PDRB, whereas the number of restaurants and foreign tourists had a negative effect on PDRB. This is owing to restrictions on the amount of foreign tourists entering other countries as a result of the Covid-19 pandemic, which has resulted in a significant decrease in the number of travelers.

Meanwhile, due to the low amount of spending by domestic tourists, the number of domestic tourists has no effect on PDRB.

Model 2 demonstrates that the tourism sector's PDRB has a significant and negative effect on poverty in Central Java Province between 2015 and 2020, confirming the research premise. Increased PDRB in the tourism sector will result in more jobs, which will improve people's welfare and alleviate poverty.

The conclusions of this study are consistent with those of Rohmat and Indrawati (2022), who found that the agricultural, manufacturing, and tourism sectors have a negative impact on poverty in Central Java. This occurred because these three sectors contribute significantly to the Central Java economy, and agriculture and manufacturing output continues to rise in 2016-2020. Furthermore, the tourism industry is closely linked to other economic sectors such as agriculture and the processing industry.

Rewah, Kumenaung, and Rotinsulu (2021) discovered that the development of the tourism industry, either directly or indirectly through North Sulawesi's economy, had no significant effect on poverty alleviation, and North Sulawesi's economy had no significant influence on poverty alleviation. The expansion of the tourism sector and the advancement of the economy in North Sulawesi Province have not been able to overcome the poverty that exists.

IMPLICATIONS

This research can be the basis for improiving the tourism sector. This research has proven that tourism can reduce the percentage of poverty. The next research is expected to be able to use a wider variety of independent variables in order to be able to explain the poverty rate in Cental Java Province through a different apporoach.

CONCLUSION

Poverty is a major issue in many countries and can stymie economic development. Poverty is a concern for the government, and poverty reduction activities are one of the goals for achieving people's wellbeing. Tourism can be one of the areas that helps to reduce poverty by raising national income, creating jobs, and earning foreign cash. The purpose of this study is to assess the effect of the number of hotels and tourists on the PDRB of the tourism sector, as well as the impact of the PDRB of the tourism sector on poverty in Central Java Province 2015-2020.

Panel data regression using the selected model Fixed Effects Model was used to fulfill the study's aims (FEM). The findings of the influence validity test reveal that the number of hotels and tourists have a positive effect on the tourism sector's PDRB, and the tourism sector's PDRB has a negative effect on poverty. As a result, the quantity of hotels and tourists has a detrimental influence on poverty in Central Java Province. Thus, the existence of a chain rule is demonstrated in this study.

To eliminate poverty in Central Java Province, the government should be able to exploit the potential of each region in order to attract more investors, which will increase jobs and lower the unemployment rate. Furthermore, the government should improve access, infrastructure, and facilities to help visitors feel at ease.

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