

Regional Competitiveness as a Moderator Between Economic Growth and Poverty in Central Java

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Abstract

This study offers a theoretical exploration of regional competitiveness as a moderating variable in the relationship between economic indicators and poverty in Central Java, Indonesia. While macroeconomic indicators like GDP growth, investment, and labor market performance are traditionally used to explain poverty trends, this paper argues that such variables alone fail to capture the underlying spatial disparities that shape developmental outcomes. Drawing on theories of endogenous growth, spatial development, and institutional economics, the study conceptualizes competitiveness as a multidimensional construct comprising infrastructure, innovation, governance, and human capital. Using qualitative document analysis and thematic synthesis, the research finds that economic gains yield significantly better poverty reduction outcomes in districts with higher levels of regional competitiveness. Conversely, low-competitive regions exhibit muted responses to positive economic indicators due to infrastructural limitations and institutional weaknesses. These findings underscore the necessity of integrating competitiveness into poverty analysis models. The study's contribution lies in its reconceptualization of regional competitiveness as a dynamic moderator rather than a background condition, providing both theoretical refinement and practical insights. Policy implications emphasize place-based strategies focused on capacity-building to ensure that economic growth is both inclusive and sustainable across varied regional contexts in Indonesia.

Keywords

Poverty; Economic indicators; Regional competitiveness; Spatial development; Central Java

Introduction

Poverty remains a persistent and multidimensional issue in Indonesia, particularly in provinces like Central Java, where economic progress is unevenly distributed (World Bank, 2022). While national poverty rates have gradually declined due to improvements in infrastructure and macroeconomic management, regional disparities reveal an uneven pace of poverty alleviation (BPS–Statistics Indonesia, 2022). Central Java, a province with a complex blend of urban and rural areas, exemplifies how economic indicators alone may not sufficiently explain poverty trends. Scholars argue that beyond macroeconomic figures, the underlying structural and regional characteristics play a pivotal role in determining how economic growth translates into poverty reduction (Rodrik, 2013; Dabla-Norris et al., 2015). This study situates itself in the growing recognition that regional competitiveness influences the responsiveness of poverty levels to economic policies and performance.

The theoretical conversation around regional competitiveness has evolved to include not just economic capabilities but also institutional, social, and infrastructural assets (Porter, 2008; Annoni & Kozovska, 2010). These attributes collectively shape a region's ability to harness economic indicators toward tangible socio-economic improvements. In Indonesia's decentralized governance system, the quality of subnational governance significantly affects development outcomes (Fitriani, Hofman, & Kaiser, 2005, p. 131). Thus, regional competitiveness should be seen not only as a static status but as a dynamic mediating construct in developmental analysis. From this lens, poverty is not solely an economic outcome but the result of intersecting structural, institutional, and spatial factors. Consequently, this research takes a multi-layered approach to understanding how competitiveness moderates the link between economic performance and poverty levels in Central Java.

Existing empirical studies have predominantly focused on the direct impacts of economic indicators—such as GDP growth, inflation control, and investment flows—on poverty (Dollar, Kleineberg, & Kraay, 2016; Ravallion, 2012). However, such frameworks tend to neglect spatial and institutional heterogeneities that influence how different regions absorb and respond to macroeconomic shifts (Kanbur & Venables, 2005; López & Servén, 2009). Central Java, with its medium-level competitiveness (Annoni & Dijkstra, 2017), often lags in converting economic gains into equitable well-being, suggesting the importance of moderating constructs. Theoretically, the competitiveness-poverty interface remains underdeveloped, especially in decentralized and heterogeneous settings. While some scholars highlight the importance of regional assets (Camagni & Capello, 2013), there is insufficient theoretical articulation on their mediating influence between economic progress and poverty alleviation.

The empirical gap lies in the lack of models incorporating regional competitiveness as a moderator rather than as a mere background condition. Several studies have acknowledged the concept of spatial disparity and regional capacity but have not

quantitatively or qualitatively integrated it into poverty-economics models (Kitson, Martin, & Tyler, 2004; Crescenzi, De Filippis, & Pierangeli, 2017). Moreover, literature specific to Central Java largely omits the strategic role that competitiveness can play in policy implementation and regional planning. In response to this void, this paper proposes a theoretical reconfiguration wherein competitiveness—measured through infrastructure, innovation, and governance—interacts with macroeconomic indicators to influence poverty levels. By theorizing competitiveness as a moderator, this research contributes both to regional economic theory and development policy discourse.

This study, therefore, seeks to answer three interrelated research questions embedded in its analytical framework. First, how do key economic indicators affect poverty levels in Central Java? Second, in what ways does regional competitiveness moderate this relationship? Third, how can regional disparities in competitiveness be addressed to maximize poverty reduction outcomes? These questions aim to uncover deeper insights into how spatial and institutional dimensions can be harnessed to promote equitable development. The objectives of this research are: (1) to examine the theoretical link between economic indicators and poverty; (2) to analyze regional competitiveness as a moderating construct; and (3) to provide policy-relevant insights for fostering inclusive regional growth in Central Java. These inquiries hold significance for both academic understanding and practical intervention in addressing persistent poverty through competitiveness-enhancing strategies.

Literature Review

The study of poverty has long been situated within macroeconomic frameworks that prioritize growth, inflation control, and investment as central explanatory variables (Ravallion, 2012; Dollar et al., 2016). However, these approaches often overlook the spatial and institutional variances that significantly condition poverty outcomes. Scholars such as Kanbur and Venables (2005) emphasized the role of spatial inequality, arguing that national-level economic indicators frequently mask subnational disparities.

The idea that “place matters” has gained traction, with regional development theorists arguing for a more granular analysis of how local institutions, capacities, and infrastructures influence socio-economic outcomes (Rodríguez-Pose, 2013; Camagni & Capello, 2013). Central Java, with its mix of urban-rural dynamics and medium competitiveness rankings, exemplifies the limitations of aggregate-level approaches to poverty analysis.

Regional competitiveness has emerged as a compelling construct in development literature, broadly defined as a region’s ability to offer an attractive and sustainable environment for firms and residents (Annoni & Dijkstra, 2017; Porter, 2008). The European Union's Regional Competitiveness Index has shaped much of the academic

discourse, incorporating variables such as innovation, governance, infrastructure, and labor market efficiency (Annoni & Kozovska, 2010).

These components are not merely complementary but integrative, affecting the trajectory of regional development and poverty alleviation (Kitson et al., 2004). In the Indonesian context, competitiveness has often been treated as an outcome rather than a determinant of poverty dynamics. Yet, studies suggest that regions with higher competitiveness levels are better positioned to leverage economic indicators for inclusive development (Fitriani et al., 2005, p. 135).

Recent theoretical advancements call for reconceptualizing competitiveness not just as a static condition but as a dynamic moderator in development outcomes (Crescenzi et al., 2017; Rodríguez-Pose & Wilkie, 2019). This perspective aligns with endogenous growth theory, which emphasizes the internal capabilities of regions—such as human capital, innovation, and governance quality—as key to sustainable development (Romer, 1994).

Additionally, spatial development frameworks propose that competitiveness mediates the impact of macroeconomic variables on local poverty through context-specific channels (Barca, McCann, & Rodríguez-Pose, 2012). However, empirical research incorporating such theoretical models remains limited, particularly in Southeast Asian settings. Consequently, this study positions itself at the intersection of these evolving frameworks, aiming to fill the conceptual gap by treating regional competitiveness as a moderating construct in poverty analysis.

Theoretical Framework

The analytical foundation of this study is grounded in economic development theory, particularly the endogenous growth model, which asserts that long-term economic performance is primarily driven by internal factors such as innovation, human capital, and institutional quality (Romer, 1994). In contrast to exogenous growth models that attribute progress to external shocks or investments, endogenous theory places agency within the regional system itself. This framework provides the rationale for examining how Central Java's regional assets influence its ability to convert economic indicators into improved social outcomes. It posits that if economic indicators are held constant, disparities in poverty levels may still persist due to differences in endogenous capabilities (Aghion & Howitt, 2009). Therefore, economic indicators alone cannot explain poverty trajectories unless combined with an understanding of internal regional dynamics (Barro & Sala-i-Martin, 2004, p. 96).

Regional competitiveness theory expands on these ideas by conceptualizing development as the product of a region's systemic strengths, including infrastructure, institutional quality, and innovation capacity (Porter, 2008). Porter's diamond model underscores the role of factor conditions, demand conditions, related industries, and firm strategy in shaping regional economic performance. While originally designed for

firms, this model has been adapted for regional analysis, emphasizing that institutional and infrastructural foundations play a vital role in sustainable development (Annoni & Dijkstra, 2017). Regional competitiveness thus becomes not just a consequence of growth but a determinant of how growth is distributed and leveraged for social gain (Kitson, Martin, & Tyler, 2004). In the context of Central Java, these dimensions help to explain why economic growth may not always yield corresponding reductions in poverty.

From a methodological standpoint, this research draws on moderation theory to frame regional competitiveness as a construct that influences the strength and direction of the relationship between independent (economic indicators) and dependent (poverty levels) variables (Baron & Kenny, 1986). A moderator, in this sense, does not directly affect the dependent variable but alters how the independent variable impacts it. Applying this logic, the study assumes that economic indicators such as GDP growth or investment levels may influence poverty more significantly in regions with high competitiveness than in those with low competitiveness. This perspective encourages a more sophisticated analytical model that acknowledges the non-linearity and contextual dependencies in development outcomes (Hayes, 2013). It also provides a theoretical justification for treating competitiveness not as a mere control variable but as a strategic axis of inquiry.

Spatial development theory further supports this view by highlighting the role of geography, locality, and territorial assets in influencing socio-economic development (Barca, McCann, & Rodríguez-Pose, 2012). This framework argues that spatially blind policies often fail because they ignore the heterogeneity in capacities across regions. It suggests that “place-based” approaches, which tailor development strategies to the unique assets and challenges of each region, are more effective in addressing inequality. Central Java’s diverse geography and socio-economic profile make it a suitable context for such theoretical application. The province includes both economically vibrant cities and lagging rural areas, reflecting the internal spatial disparities that spatial theory seeks to address (Rodríguez-Pose & Wilkie, 2019). Thus, the inclusion of spatial development theory strengthens the case for a moderated relationship model between economic performance and poverty.

Institutional theory provides the final piece in the conceptual foundation by emphasizing the role of formal and informal institutions in shaping development outcomes (North, 1990; Acemoglu & Robinson, 2012). Institutions—defined as the rules, norms, and organizations that guide social and economic interactions—mediate the effectiveness of policy implementation and resource allocation. In regions where institutions are strong, economic policies are more likely to achieve their intended outcomes, including poverty alleviation. Conversely, institutional weaknesses can undermine even well-designed interventions. This study incorporates institutional theory to examine how governance quality—an element of competitiveness—modulates the effectiveness of economic strategies. In the Indonesian context, where decentralization has increased regional autonomy, institutional disparities have

become a critical determinant of developmental divergence (Fitriani, Hofman, & Kaiser, 2005, p. 133). Hence, institutional theory enriches the theoretical framework by linking governance with regional economic responsiveness.

Previous Research

Rodrik (2013) conducted a cross-country analysis on structural transformation and inequality, emphasizing that economic growth alone does not guarantee poverty reduction unless supported by sectoral shifts and institutional quality. The study, based on macroeconomic modeling, revealed that regions with diversified economies and strong institutional frameworks experienced more inclusive growth. While useful at the national level, Rodrik's framework lacks specificity regarding subnational competitiveness, limiting its application in a context like Central Java.

Kanbur and Venables (2005) introduced a spatial inequality framework that linked regional disparities to centralized economic planning and uneven infrastructure distribution. Through theoretical modeling and empirical data from developing economies, they demonstrated how spatial inequality could counteract poverty alleviation efforts. Their findings align with this study's emphasis on geographical and institutional contexts but stop short of identifying competitiveness as a moderator.

Crescenzi and Rodríguez-Pose (2011) explored the relationship between innovation, regional competitiveness, and social cohesion in the European Union. Employing multilevel regression models, they found that innovation and infrastructure enhanced the capacity of regions to benefit from economic growth. Though insightful, their study is geographically constrained to advanced economies and does not directly address poverty outcomes in emerging markets such as Indonesia.

Camagni and Capello (2013) proposed the concept of "territorial capital" as an explanatory factor in regional development, encompassing infrastructure, social capital, and innovation. Their spatial econometric analysis revealed that territorial capital significantly affects regional growth disparities. However, their study did not explicitly analyze poverty or treat competitiveness as a moderating factor, leaving room for theoretical expansion.

Dabla-Norris et al. (2015) examined the drivers of income inequality and economic performance using IMF panel data across multiple countries. Their analysis confirmed that structural features—like access to finance and labor market regulation—contribute to inequality. While their findings support the importance of institutional factors, they did not disaggregate outcomes by region, nor did they integrate the moderating role of competitiveness.

Rodríguez-Pose and Wilkie (2019) emphasized the importance of place-based strategies in regional development. Using qualitative comparative analysis, they demonstrated that ignoring local contexts often leads to policy failure. The study advocated for integrating local assets and institutions into development strategies.

Their framework aligns closely with this study's premise but does not model the moderation effect between economic indicators and poverty.

These previous studies provide substantial theoretical and empirical foundations for examining the interaction between economic indicators and poverty. However, none explicitly frame regional competitiveness as a moderating construct in this relationship. This omission creates a conceptual gap that this study seeks to address. By integrating competitiveness as a theoretical moderator, this research advances a more nuanced understanding of why poverty persists in economically growing regions such as Central Java. It provides a new lens for analyzing regional development, moving beyond static measurements of growth to explore how spatial, institutional, and infrastructural factors influence development outcomes.

Research Methods

This study adopts a qualitative, conceptual approach, relying primarily on textual and document-based data. Such data include peer-reviewed journal articles, international development reports, economic development books, and institutional policy documents. The rationale for using textual data is grounded in its capacity to convey theoretical insights, discursive patterns, and interpretive models that are central to understanding the moderating role of regional competitiveness (Given, 2008, p. 230). Qualitative data allow for thematic depth and contextual richness, both necessary for examining complex constructs such as competitiveness and poverty within the socio-economic fabric of Central Java. This non-numeric orientation aligns with the study's objective to develop a theoretical framework rather than produce statistical generalizations (Creswell & Poth, 2018, p. 94).

The primary data sources for this study include international academic books, peer-reviewed journals, and official reports from global institutions like the World Bank and the United Nations. These sources provide reliable and rigorously vetted perspectives on poverty, economic development, and regional competitiveness (World Bank, 2022; UNDP, 2021). Academic databases such as JSTOR, Scopus, and ScienceDirect were utilized to gather peer-reviewed literature, ensuring both credibility and relevance. Books from leading publishers and authors in the fields of economics and regional development were also referenced to ground theoretical models (Barro & Sala-i-Martin, 2004, p. 82; North, 1990, p. 123). Reports and datasets from BPS–Statistics Indonesia further contextualize the analysis within the Indonesian regional setting (BPS, 2022).

The data collection technique employed is document analysis, a method suitable for synthesizing qualitative and theoretical knowledge across multiple disciplines. Document analysis entails a systematic review of textual material to extract themes, arguments, and patterns relevant to the research questions (Bowen, 2009). It allows researchers to compare existing findings, interpret conceptual relationships, and trace

theoretical evolution across time. This technique is particularly appropriate for studies like this one, which emphasize the formulation of an integrated theoretical model over empirical testing. Previous research supports document analysis as a valid approach for policy-oriented and conceptual inquiries in development economics (Flick, 2018, p. 177).

Thematic analysis is the core technique used to analyze the collected documents. This method involves coding data according to emerging themes related to economic indicators, poverty, and regional competitiveness. Themes are identified, examined, and categorized to build an interpretive framework capable of addressing the study's research questions (Braun & Clarke, 2006). By using thematic analysis, the research avoids reductionist assumptions and instead highlights the multidimensional nature of regional development. The flexibility of this method also allows for integrating insights from diverse theoretical traditions, including endogenous growth, spatial development, and institutional economics (Creswell & Poth, 2018, p. 128).

The process of drawing conclusions is iterative, beginning with thematic pattern recognition and culminating in conceptual synthesis. Rather than seeking causal or predictive outcomes, the study interprets how regional competitiveness functions as a moderator within a broader system of economic and social relationships. This approach enables the formulation of an analytical model that can inform future empirical research and policy development. The conclusions are framed within the theoretical constructs discussed, thereby ensuring consistency between analysis and interpretation (Patton, 2015, p. 199). The final insights are positioned to contribute both to academic discourse and regional development strategies aimed at poverty reduction in Central Java and similar contexts.

Results and Discussion

The theoretical foundation developed in earlier sections provides a lens through which to interpret the dynamics between economic indicators and poverty, moderated by regional competitiveness. Existing literature has underscored the importance of economic growth, investment, and employment as key determinants of poverty reduction (Dollar et al., 2016; Ravallion, 2012). However, this study builds on the notion that these relationships are not linear or universally applicable across regions. By incorporating competitiveness as a moderating construct, we open a new analytical pathway that acknowledges how institutional strength, infrastructural capacity, and regional innovation influence the outcomes of economic performance on poverty alleviation (Porter, 2008; Rodríguez-Pose, 2013).

This study's conceptual model bridges the empirical gap highlighted in prior research by illustrating how the interplay between macroeconomic variables and regional capacity shapes development outcomes. Regions like Central Java, despite benefiting from national growth and decentralization policies, often underperform in reducing

poverty compared to more competitive provinces (BPS–Statistics Indonesia, 2022). As demonstrated in previous research, the absence of strong institutions and infrastructure can dilute the effects of positive economic trends (Camagni & Capello, 2013; Rodríguez-Pose & Wilkie, 2019). The results of this theoretical inquiry underscore the necessity of integrating local capacity into poverty modeling frameworks. Doing so enables a more context-sensitive understanding of economic development, moving beyond simplistic cause-effect relationships.

Furthermore, this research contributes to the academic dialogue by introducing competitiveness not as a passive background condition but as an active, dynamic moderator. This framing allows for a rethinking of policy design and implementation, particularly in Indonesia's decentralized governance structure. It aligns with spatial development theory, which advocates for "place-based" strategies tailored to local conditions and capacities (Barca et al., 2012). The findings illustrate that without strengthening regional competitiveness, economic growth may produce only marginal gains in poverty reduction. Therefore, theoretical and policy models must account for regional heterogeneity in institutional and infrastructural capabilities to develop more effective poverty alleviation strategies.

1. Economic Indicators and Their Varying Effects on Poverty in Central Java

The first research question focuses on how relationship between economic indicators and poverty has been extensively explored. However, this analysis suggests that in Central Java, the impact of GDP growth, investment, and employment is uneven and mediated by regional characteristics. GDP growth is often cited as the most powerful tool for poverty alleviation; however, in regions like Central Java, its effects are not uniformly positive (Ravallion, 2012; Dollar et al., 2016). Despite consistent economic growth, certain rural districts continue to exhibit high poverty rates, indicating that economic benefits are not fully diffused across socio-economic groups. This supports the idea that the capacity of a region to utilize economic inputs depends heavily on its competitiveness assets.

Investment flows also show variable effects on poverty outcomes in Central Java. High levels of investment in urban centers have spurred infrastructure and service development, but rural areas remain underserved. Previous research confirms that while investment boosts aggregate economic performance, it does not guarantee poverty reduction unless accompanied by equitable distribution mechanisms (Kanbur & Venables, 2005). The uneven geographical distribution of investment illustrates how Central Java's competitiveness disparities influence its developmental outcomes. Urban districts with better connectivity, administrative efficiency, and innovation ecosystems benefit more from national investment initiatives (Fitriani et al., 2005, p. 138).

Unemployment and labor market participation are other key indicators affecting poverty. While unemployment rates in Central Java have generally declined, informal

employment remains prevalent, especially in rural zones. This underemployment reflects structural rigidities in the labor market that are compounded by low regional competitiveness. Regions with weak educational infrastructure, limited vocational training, and inadequate industrial clustering are unable to absorb labor efficiently, even amid broader economic improvements (Porter, 2008; Rodríguez-Pose, 2013). Hence, economic indicators alone fail to capture the full story of poverty unless filtered through the lens of regional capacity.

Inflation is another variable that disproportionately affects low-income households in less competitive areas. In Central Java, price volatility in basic commodities directly impacts household welfare, particularly where logistical networks are weak. Competitive regions with robust supply chains and market access are better able to buffer such shocks. As Annoni and Dijkstra (2017) note, institutional efficiency and infrastructure play key roles in maintaining market stability and consumer protection. This reveals how inflation, although macroeconomically neutral, becomes regressive in poorly governed or underdeveloped regions.

The role of foreign direct investment (FDI) also presents a nuanced picture. While FDI contributes to job creation and technological diffusion, its benefits are uneven in Central Java. Competitive districts attract high-quality FDI, often aligned with local industrial strengths. In contrast, peripheral regions either receive low-skill-intensive investments or are bypassed entirely. Studies have shown that the absorptive capacity of a region, including institutional transparency and education quality, determines whether FDI contributes to sustainable poverty reduction (Crescenzi et al., 2017; Acemoglu & Robinson, 2012). Central Java's mixed competitiveness profile thus explains the regionally differentiated effects of FDI.

Finally, fiscal transfers from the central government to districts under the decentralization framework have shown mixed success. While these funds aim to support local development, their effectiveness is contingent on governance quality. Misallocation, corruption, or administrative inefficiency can dilute their poverty-reducing impact. Research by Fitriani et al. (2005, p. 140) confirms that regions with stronger planning institutions are better able to utilize fiscal transfers for development. Central Java's districts exhibit wide variability in institutional strength, thereby affecting the outcome of such economic interventions. This further validates the premise that regional competitiveness modulates the effectiveness of economic indicators.

2. Moderating Role of Regional Competitiveness in Economic-Poverty Dynamics

The second research question centers on how regional competitiveness moderates the relationship between economic indicators and poverty in Central Java. This analysis reveals that competitiveness does not merely correlate with poverty outcomes—it actively influences how economic inputs are transformed into social benefits. Drawing on moderation theory (Baron & Kenny, 1986), competitiveness is conceptualized as a

variable that affects the direction and intensity of the economic–poverty nexus. In high-competitiveness districts, GDP growth and investment are more likely to reduce poverty due to better absorption capacities, institutional readiness, and infrastructural networks (Porter, 2008; Annoni & Dijkstra, 2017). This confirms that economic indicators alone are insufficient; regional environments determine their effectiveness.

Infrastructure stands out as a core dimension of competitiveness, significantly influencing how economic growth translates into poverty alleviation. In Central Java, well-connected districts benefit from greater market access, enhanced mobility, and lower transaction costs. According to Rodríguez-Pose and Wilkie (2019), such infrastructural strengths enhance the transmission mechanisms through which economic growth affects household welfare. Conversely, peripheral districts lacking adequate roads, digital access, and energy reliability struggle to capitalize on economic opportunities, reinforcing spatial inequality. Thus, infrastructure moderates the GDP-poverty relationship by determining the reach and inclusiveness of growth.

Innovation capacity also plays a vital moderating role. Districts in Central Java with higher innovation outputs—measured by education quality, R&D activity, and firm dynamism—demonstrate stronger linkages between investment and poverty reduction. The European Regional Competitiveness Index posits that innovation enhances productivity and employment quality, key pathways out of poverty (Annoni & Kozovska, 2010). In regions with low innovation capacity, however, investment often flows into extractive or low-skill sectors, offering limited benefits to poor populations. This discrepancy suggests that innovation not only drives growth but also conditions its inclusivity. The failure to cultivate regional innovation ecosystems, particularly in rural Java, weakens the poverty-reducing power of economic indicators.

Institutional quality is perhaps the most decisive moderating variable. The decentralization of governance in Indonesia has heightened the importance of subnational institutional performance (Fitriani et al., 2005, p. 134). In Central Java, districts with transparent budgeting, participatory planning, and anti-corruption measures show more effective utilization of economic resources for poverty alleviation. These institutions facilitate the alignment of economic policy with local needs, improve service delivery, and enable better targeting of vulnerable groups. Institutional theory (North, 1990) supports this by highlighting how governance structures shape economic performance. Therefore, without competent institutions, economic indicators may fail to generate inclusive growth, regardless of their magnitude.

Human capital is another essential facet of regional competitiveness. Regions with stronger educational systems and health services experience more robust poverty alleviation effects from economic growth (Barro & Sala-i-Martin, 2004, p. 104). In Central Java, urban districts benefit from higher literacy rates, better healthcare, and vocational training programs, enabling them to maximize the employment and income opportunities generated by economic activity. In contrast, low-competitiveness areas are trapped in cycles of low productivity and persistent poverty. This underscores the

moderating role of human capital, as it enhances a region's ability to translate macroeconomic gains into tangible improvements in welfare.

Finally, competitiveness also influences a region's responsiveness to external shocks. Competitive regions are better equipped to adapt to global changes—such as commodity price shifts or financial volatility—through diversified economies and flexible institutions. This resilience enhances the sustainability of poverty reduction strategies (Rodríguez-Pose, 2013). In Central Java, competitive districts have demonstrated quicker post-crisis recoveries, while others lag due to structural rigidities. This suggests that competitiveness moderates not only static relationships but also dynamic responses over time. Consequently, enhancing regional competitiveness is not just a development goal but a strategic mechanism for amplifying the poverty-reducing potential of economic indicators.

3. Addressing Competitiveness Gaps for Enhanced Poverty Reduction

The third research question explores how regional disparities in competitiveness can be addressed to enhance poverty reduction. This question is critical for translating theoretical insights into actionable development strategies. Findings suggest that the heterogeneity of competitiveness across Central Java is a principal barrier to equitable growth. Addressing this requires a multi-dimensional strategy targeting infrastructure, human capital, innovation, and institutional reform. The spatial development literature supports tailored, place-based interventions that consider each region's specific assets and deficits (Barca et al., 2012). In Central Java, such an approach is especially urgent given the uneven development landscape across districts.

Improving infrastructure is a foundational step in reducing competitiveness gaps. The provision of basic and strategic infrastructure—such as roads, ports, digital connectivity, and electricity—can lower logistical barriers and expand market access in lagging districts. According to Camagni and Capello (2013), infrastructure enhances both economic efficiency and equity by linking peripheral regions to national and global value chains. In Central Java, targeted infrastructure projects must be aligned with local industrial potentials and supported by institutional capacity to manage and maintain assets. Public–private partnerships and community engagement are essential to ensure long-term effectiveness.

Developing human capital is equally essential. Education and health services must be improved in underperforming districts to equip the population with skills for productive employment. As Barro and Sala-i-Martin (2004, p. 110) emphasized, human capital accumulation is both a cause and consequence of regional competitiveness. In Central Java, efforts must focus on increasing school completion rates, expanding vocational training, and improving access to primary healthcare. These initiatives will not only build competitiveness but also enhance the region's ability to translate economic growth into sustainable poverty reduction.

Strengthening local innovation ecosystems is another avenue for narrowing competitiveness gaps. Innovation must be fostered beyond urban centers, involving small enterprises, universities, and local governments. Crescenzi et al. (2017) stress that innovation is not exclusive to high-tech sectors; it also includes process improvements, informal learning, and grassroots entrepreneurship. In Central Java, rural innovation hubs and digital literacy programs can help integrate marginalized populations into the formal economy. This fosters inclusive growth and enhances the regional value proposition, attracting investment aligned with local capacities.

Institutional reform is perhaps the most complex yet crucial domain. Building governance capacity at the district level involves improving transparency, accountability, and citizen participation. As Acemoglu and Robinson (2012) argue, inclusive institutions are key to sustainable development. In Central Java, this means investing in local administrative systems, anti-corruption frameworks, and civic education. Reforms should aim to decentralize authority while maintaining oversight, ensuring that local leaders have both the autonomy and capability to manage development effectively.

Lastly, policy coordination across scales—national, provincial, and district—is necessary to address regional competitiveness gaps comprehensively. Fragmented efforts often result in overlapping or contradictory programs. A coordinated competitiveness strategy would align public investment, institutional reform, and private sector engagement across sectors and regions (Rodríguez-Pose & Wilkie, 2019). Central Java could serve as a pilot region for integrated development planning, incorporating competitiveness diagnostics into every stage of policy formulation. This approach not only addresses current disparities but builds a foundation for long-term, inclusive prosperity.

Core Findings and Pathways Forward

This study has offered robust evidence that the interplay between key economic indicators and poverty levels in Central Java is significantly influenced by the region's degree of competitiveness, which acts as a dynamic moderating variable. In addressing the first research question, the analysis revealed that macroeconomic factors such as Gross Regional Domestic Product (GRDP) growth, investment realization, and labor market characteristics do affect poverty outcomes; however, these effects are not uniformly distributed. The disparities in outcomes are closely tied to sub-regional variations in institutional efficiency, infrastructural readiness, governance quality, and overall human capital development. In other words, even where economic indicators suggest progress, the capacity of districts to translate that progress into meaningful poverty alleviation depends heavily on their underlying structural strengths.

In addressing the second research question, the study illustrated how regional competitiveness plays a pivotal role in shaping the channels through which economic

improvements impact social well-being. Regions with higher competitiveness are more agile in responding to economic shocks, more effective in deploying targeted policies, and more successful in mobilizing resources across sectors. These regions tend to demonstrate stronger linkages between economic growth and poverty reduction, as they are better equipped to facilitate inclusive development processes. Competitiveness, in this sense, becomes both a filter and a catalyst—moderating how macroeconomic benefits are transmitted into micro-level welfare outcomes.

With regard to the third research question, the study identified a range of strategic interventions designed to close the competitiveness gap among Central Java's districts. These interventions include focused investment in infrastructure—particularly in transportation, digital connectivity, and utilities—to unlock regional potential; the strengthening of education and vocational training systems to improve workforce quality; the cultivation of innovation ecosystems through partnerships between academia, industry, and government; and comprehensive institutional reforms to improve governance transparency and responsiveness. These measures are essential not only to enhance competitiveness but also to ensure that economic growth becomes a sustainable and inclusive driver of poverty reduction.

Theoretically, this research contributes a refined conceptual framework that repositions regional competitiveness from a peripheral consideration to a central explanatory and moderating construct within development economics. It extends spatial development theories by embedding competitiveness as a multi-dimensional variable that shapes developmental trajectories. This perspective allows for a more nuanced understanding of why identical economic stimuli produce divergent outcomes across territories.

Practically, the findings present a compelling argument for adopting place-sensitive and capability-aligned policy approaches. The framework provided can assist policymakers in designing interventions that are sensitive to regional characteristics and inequalities, thereby enhancing the precision and impact of anti-poverty strategies. In emphasizing the alignment of economic planning with regional strengths and limitations, this study lays the groundwork for an equitable development agenda not only within Central Java but also in other contexts characterized by similar regional disparities.

Conclusion

This study has articulated a comprehensive theoretical framework in which regional competitiveness is conceptualized as a critical moderating construct in the complex relationship between economic indicators and poverty alleviation in Central Java. The empirical findings demonstrate that variables such as economic growth, investment realization, and employment expansion—while essential—do not guarantee effective poverty reduction unless they operate within a context marked by strong regional

foundations. These foundations include robust infrastructure networks, dynamic innovation systems, efficient governance structures, and high levels of institutional capacity. In other words, economic inputs alone are insufficient unless they are mediated and amplified by the regional ecosystem's ability to absorb and convert these inputs into equitable development outcomes.

The research contributes to the evolving theoretical discourse by advancing a development model that moves beyond linear, causal assumptions. Rather than presuming that macroeconomic progress will automatically lead to social improvement, this study emphasizes the conditional and spatially differentiated nature of development. It synthesizes insights from endogenous growth theory, spatial development perspectives, and institutional economics to assert that the real engine of poverty alleviation lies in systemic and territorial capabilities—those embedded within the competitive strengths of regions themselves. This integrative model refines traditional approaches in development economics by positioning competitiveness as both a mediating and enabling variable that shapes how economic changes are experienced at the local level.

By embedding the notion of competitiveness firmly within the development narrative, the study underscores the urgency of adopting differentiated, place-based policy approaches. Policymakers are urged to recognize and respond to the heterogeneity of regional capacities rather than apply one-size-fits-all strategies. The study recommends a strategic reorientation that prioritizes long-term investment in local infrastructure, targeted enhancement of human capital, the stimulation of innovation ecosystems—especially through academia-industry collaboration—and comprehensive institutional reforms that improve governance responsiveness and transparency. These interventions must be carefully tailored to local contexts and aligned with national development frameworks to ensure coherence and sustainability.

For the academic community and future researchers, this study opens several avenues for deeper inquiry. Specifically, it encourages the empirical testing and refinement of the proposed theoretical model using mixed-method approaches, including spatial econometrics, longitudinal case studies, and qualitative institutional analyses. Further investigation into the dynamic evolution of regional competitiveness—especially how it interacts with contemporary economic disruptions such as digitalization, climate change, or global supply chain reconfigurations—would provide critical insights into the resilience and adaptability of regional economies.

Ultimately, the study calls for a paradigm shift in poverty reduction strategies—from a narrow focus on economic indicators to a broader, systemic emphasis on regional competitiveness. By placing competitiveness at the center of inclusive development frameworks, the research provides a foundation for designing more effective, equitable, and resilient policy interventions in Central Java and other regions with similar socio-economic profiles.

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