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What is the Impact of Infrastructure, Information and Communication Technology (ICT), and Economic Stability on Central Java's Economic Growth?

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Abstract

This study seeks to examine the impact of Infrastructure, ICT, and Economic Stability on the economic growth rate in Central Java. The data for this research is procured from authoritative sources, namely the Statistics Indonesia (Indonesian: Badan Pusat Statistik, BPS, lit. 'Central Agency on Statistics') and the National Research and Innovation Agency (Indonesian: Badan Riset dan Inovasi Nasional, BRIN). To analyze the data, a multiple linear regression method was employed, utilizing cross-sectional data. The findings reveal that, when considered collectively, all the variables significantly influence Central Java's economic growth. On an individual level, infrastructure, ICT, and economic stability each demonstrate a marked positive correlation with economic growth. Drawing from these insights, the study underscores the imperative for devising comprehensive macro-socioeconomic policies. Such strategic interventions are crucial to ensure that Central Java's economic growth remains both robust and sustainable over time.

Keywords

economic growth; economic stability; information technology; infrastructure

Introduction

Economic growth stands as a cornerstone in the vast realm of economic development ([Aloko & Abdullahi, 2018](#); [Mokyr, 2009](#)). This growth is not just about numbers and percentages; it's about improving the quality of life for every individual in a region ([Diener & Suh, 1997](#)). Alongside this primary objective, there are other equally crucial goals that policymakers and economists aim for ([Dolowitz & Marsh, 2000](#); [Kabeer, 2005](#)). These include the reduction of poverty, which is not just about income but also about access to essential services and opportunities; addressing inequality, which involves ensuring that every individual, regardless of their background, has an equal chance at success; decreasing unemployment, which is about providing meaningful work opportunities for all; and enhancing the human development index, a composite measure that encompasses various aspects of human well-being ([Burton, Huq, Lim, Pilifosova, & Schipper, 2002](#)). These objectives, while distinct, are interconnected and essential for holistic development.

The regional competitiveness index is more than just a metric; it's a reflection of a region's heartbeat, indicating how well it's leveraging its resources and potential ([Gentilini & Webb, 2008](#)). This index serves as a barometer, gauging a region's effectiveness in creating an environment conducive to sustainable economic growth ([Shi, Qi, & Mu, 2023](#)). When we talk about an increase in this index, we're discussing a region's ability to innovate, adapt, and thrive in a constantly changing global landscape ([Lacy, Cooper, Hayward, & Neuberger, 2011](#)). [Soekapdjo, Tribudhi, Hariyanti, & Nugroho \(2020\)](#) is a testament to this,

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where they meticulously dissected the relationship between this index and economic growth in Central Java, providing valuable insights that can guide future policies and strategies.

The regional competitiveness index is not monolithic; it's a mosaic of 12 distinct pillars, each representing a critical aspect of regional development. These pillars range from institutional frameworks that ensure good governance and rule of law to innovation capabilities that foster creativity and technological advancements ([Andrés, Asongu, & Amavilah, 2015](#)). In the aftermath of the global pandemic, certain pillars have gained prominence in government agendas ([Bax, Bonaccolto, & Paterlini, 2023](#)). Infrastructure development, for instance, is not just about building roads and bridges but about connecting people and creating opportunities ([Kuik, 2021](#)). Similarly, economic stability ensures that businesses can operate without fear of sudden economic downturns, and the focus on information technology is about preparing the region for a digital future ([Papagiannidis, Harris, & Morton, 2020](#); [Wang, Schlagwein, Cecez-Kecmanovic, & Cahalane, 2020](#)).

Infrastructure is the backbone of any thriving economy. It's not just about concrete and steel; it's about creating pathways for people, goods, and services to move efficiently. When we discuss the importance of infrastructure, we're talking about its ability to bridge gaps, connect remote areas, and foster economic activities. Enhanced infrastructure can transform regions, making them more accessible and attractive for investments. Studies by [Calderón & Servén \(2004\)](#) delved deep into this, highlighting the tangible benefits of infrastructure investment. Their findings underscore the idea that infrastructure is not just a cost but an investment in the future.

In today's interconnected world, information technology (IT) is the thread that weaves economies together. IT is not just about computers and networks; it's about harnessing the power of data and digital tools to drive efficiency, innovation, and growth. The digital revolution has transformed industries, and regions that embrace IT stand to gain immensely. Macroeconomic stability is the bedrock upon which economies are built. It's not just about numbers and financial indicators; it's about creating an environment where businesses can plan for the future, where investors feel confident, and where consumers can spend without fear. Stability ensures that economic activities can proceed without disruptions, leading to consistent growth. Research by Agung and Prasetyo delves into this intricate relationship, highlighting the importance of a stable economic environment for sustained growth.

Central Java, with its rich tapestry of cultures, traditions, and economic activities, stands as a beacon in Indonesia's economic landscape. Over the years, this province has showcased resilience and adaptability, navigating challenges and seizing opportunities. The economic growth figures from the past five years paint a picture of a region on the move, with a brief setback in 2020 due to the global pandemic. However, the rebound in subsequent years is a testament to Central Java's indomitable spirit and its ability to adapt and thrive.

Several studies have previously explored the dynamics of economic growth and regional competitiveness, especially in Central Java. For instance, a study by [Triyani, Adam, & Kristina \(2019\)](#) emphasized the potential of Kutoarjo's railway transport node in bolstering economic growth through tourism-based transit node development. Another research by [Wahyuningrum, Mafruhah, & Mulyanto \(2022\)](#) mapped the regional financial capacity in Central Java, shedding light on the disparities in economic growth across different regions. [Destiningsih, Sugiharti, & Achsa \(2019\)](#) explored the competitiveness and accessibility of food commodities in the Barlingmascakeb region, highlighting the potential of specific commodities in driving regional economic growth. Lastly, a recent study by [Pamela & Indrawati \(2022\)](#) analyzed the impact of inflation, exports, and employment on Central Java's economic growth. While these studies provide valuable insights, our current research distinguishes itself by focusing on the post-pandemic era and the specific pillars of infrastructure, information and communication technology, and economic stability in Central Java in 2022.

Given the aforementioned background and challenges, this study seeks to discern the influence of the infrastructure pillar index, information and communication technology, and economic stability across 35 City districts in Central Java in 2022, utilizing multiple linear regression cross-section data analysis.

Methods

The data used in this study comes from the publications of the [Badan Pusat Statistik \(2023\)](#) and [Badan Riset dan Inovasi Nasional \(2023\)](#). This research focuses on all urban districts in Central Java with a research period of 2021. The dependent and independent variables in this study can be seen in Table 1.

Table 1. Variabe Research

Dependent Variables	Unit	Data Scale
Economic Growth Rate	Percent	Ratio
Independent Variables	Unit	Data Scale
Infrastructure Pillar Index	Points	Ratio
ICT Pillar Index	Points	Ratio
Macroeconomic Stability Pillar Index	Points	Ratio

The regression model used is a multiple linear regression analysis of cross-section data. In regression analysis, it is necessary to perform classical assumption tests. This test is performed to ensure that the model can be used to see the influence between variables and predict the dependent variable's value from the independent variable's known value ([Gujarati, 2004](#)). Classical assumption tests used in regression for cross-section data include normality, heteroskedastic, and multicollinearity tests.

Once the best model has been selected and meets the classical assumptions, the next step is to test the model's goodness ([Walpole, Myers, Myers, & Ye, 2012](#)). The merits of model tests can be seen in Table 2. After all the test criteria of the model are met, the interpretation of the formed regression equation is carried out.

Table 2. Goodness Test Model

The goodness of Fit Test	Zero Hypothesis	Alternative Hypotheses	Reject Ho
Test Coefficient of Determination/ adjusted R square	R square > 0.5		
Simultaneous Test/ F-Test	Model Not fit/ All variables have no effect	Model fit / at least one variable has a significant effect	Probability value < 0.05
Partial Test/ T-Test	Certain <i>independent variables</i> have no effect	Influential <i>independent variables</i>	Probability value < 0.05

The hypotheses in this study are:

H₁: The Infrastructure Pillar has a significant positive effect on the rate of economic growth in Central Java

H₂: The Information and Communication Technology (ICT) pillar has a significant positive effect on the rate of economic growth in Central Java

H₃: The Pillar of Macroeconomic Stability has a significant positive effect on the rate of economic growth in Central Java.

Result

The discussion begins with a descriptive analysis to determine the characteristics of each variable in the study over the research period. Table 3 presents this descriptive analysis. The average Economic Growth Rate is 2.85 percent. Magelang City has the lowest value at 0.65 percent, while Semarang City has the highest at 14.58 percent. The Infrastructure Pillar's average value is 2.14 points. The lowest value, 1.53 points, is observed in both Wonosobo and Pekalongan Districts, and the highest, 3.30 points, is in Semarang City. The ICT Adoption Pillar has an average value of 3.30 points. Temanggung Regency has the lowest at 3.05 points, and Semarang City has the highest at 4.95 points. The Macroeconomic

Stability Pillar has an average of 2.97 points. Brebes Regency has the lowest value at 2.35 points, and Semarang City has the highest at 4.17 points.

Table 3. Descriptive Analysis

Variable	Mean	Std. Dev	Minimum	Maximum
Infrastructure Pillar	2.14	0.486	1.53	3.30
ICT Adoption Pillars	3.30	0.347	3.05	4.95
Pillars of Macroeconomic Stability	2.97	0.347	2.35	4.17
Economic Growth Rate	2.85	2.536	0.65	14.58

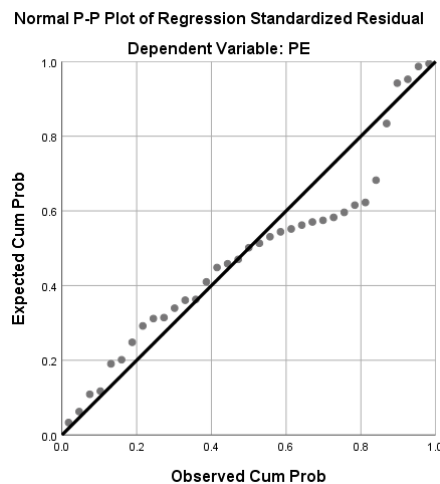
The regression model requires no high multicollinearity between independent variables, as can be seen from the Variant Inflation Factor (VIF) value of less than 10. In Table 4, all independent variables had a VIF value of less than ten in this study. This result means all independent variables are used in the model.

Table 4. Multicollinearity Test

Variable	VIF
Infrastructure Pillar	1.116
ICT Adoption Pillars	1.704
Pillars of Macroeconomic Stability	1.702

Next, a normality test was carried out on the residual model. The normality test in this study was conducted to test the normality of data from each model with P-P Plot and Kolmogorov Smirnov tests.

Figure 1. P-P Plot Residuals



It can be seen from the P-P Plot graph that the residual is on the line $y=x$ (45°) for model; this identifies that the data is normally distributed. This result is also supported by Kolmogorov Smirnov's test that z stat values of $0.198 < 1.96$ and significant values = $0.115 < \alpha = 0.05$ so that the data is normally distributed.

Table 4. Kolmogorov Smirnov Testing

Normal Parameters	Mean	0.000
	Std. Deviation	1.597
Test Statistics		0.198
Asymp. Sig. (2-tailed)		0.115a
a. Test distribution is Normal.		

This research tests heteroskedasticity by using scatter plots between the residual and the predicted value of y. A model has heteroskedasticity if the scatter plot pattern forms a specific function pattern. From Figure 2, you can see a random scatter pattern, so the model is said to be free from the assumption

of heteroskedasticity.

Figure 2. Scatter Plot of Residuals and Predicted Values

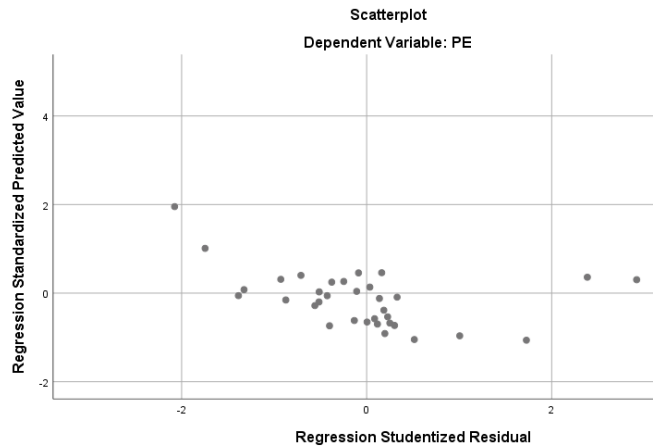


Table 5 shows the magnitude of the coefficient of determination. The value of the coefficient of determination is 0.564. The value of this coefficient means that all independent variables can explain the variation in the percentage of economic growth of 56.4 percent; Other variables outside the model influenced the remaining 43.6 percent.

Table 5. Coefficient of Determination

R	R Square	Adjusted R Square	Durbin-Watson
0.776 ^a	0.603	0.564	1,798

The F/Anova test shows that all independent variables together affect IPEI. These results are identified in Table 6 by the statistical probability valueability value F = 0.00, more diminutive than alpha = 0.05. These results mean that the modeling done is appropriate.

Table 6. Simultaneous Test/ F Test/ ANOVA Test

Type	Sum of Squares	Df	Mean Square	F	Sig.
Regression	131.852	3	43.951	15.685	0.000 ^b
Residuals	86.863	31	2.802		
Total	218.715	34			

Furthermore, a partial test was carried out to check the effect of each independent variable. In Table 7, it can be seen that all variables have a significant impact. This result is indicated by a probability value less than alpha=0.05. When viewed from the sign of the coefficient, all variables have a significant positive effect.

Table 7. Partial Test/ Hypothesis Test

Variable	B	SE	T stat	Sig.value
(Constant)	-16.488	2.925	-5.637	0.000
Infrastructure Pillar	1.308	0.623	2.099	0.044
Pillar of Macroeconomic Stability	3.057	1.079	2.833	0.008
ICT Adoption Pillars	2.250	1.078	2.088	0.045

$\widehat{economic\ growth} = -16.488 + \text{Infrastructure Pillar} + 3.057 \text{ Macroeconomic Stability Pillar} + 2.250 \text{ ICT Adoption Pillar}$.

Discussion

Firstly, the infrastructure pillar has a positive impact on the economic growth rate in Central Java. The

coefficient of 1.308, with a value of $|t \text{ stat}|=2.099$ exceeding the t table value of 1.96 and a probability value of 0.044, which is less than the alpha value of 0.05, confirms this relationship. Practically, this implies that for every 1-point increase in the infrastructure pillar, there is a corresponding increase in the economic growth rate by 1.308 percent, provided other variables remain constant. This finding is consistent with the studies conducted by [Ray & Ing \(2016\)](#) and [Yusuf & Sumner \(2015\)](#). The enhancement of infrastructure facilities can lead to better logistics access and cost efficiency, which in turn can boost a region's economic growth.

Secondly, the pillar of macroeconomic stability plays a crucial role in influencing the economic growth rate in Java. This is evident from its coefficient of 3.057, a $|t \text{ stat}|$ value of 2.833, which is greater than the t table value of 1.96, and a probability value of 0.008, which is less than the alpha value of 0.05. This suggests that a 1-point increase in the pillar of economic stability can lead to a 3.057 percent rise in the economic growth rate, assuming other variables remain unchanged. This observation is in line with the research findings of [Basyariah, Kusuma, & Qizam \(2021\)](#) and [Mahendra \(2015\)](#). A stable macroeconomic environment provides investment certainty, which can stimulate economic activity and growth.

Lastly, the ICT adoption pillar significantly affects the economic growth rate in Java. With a coefficient of 2.25, a $|t \text{ stat}|$ value of 2.088, which surpasses the t table value of 1.96, and a probability value of 0.045, which is less than the alpha value of 0.05, it is evident that a 1-point increase in the ICT adoption pillar can result in a 2.25 percent increase in the economic growth rate, assuming other variables are held constant. This result is corroborated by the studies of [Keller & von der Gracht \(2014\)](#) and [Cardona, Kretschmer, & Strobel \(2013\)](#). The adoption and utilization of information and communication technology can lead to enhanced productivity, efficiency, and effectiveness, which can subsequently drive economic growth in a more modern direction.

The positive relationship between the infrastructure pillar and economic growth in Central Java is consistent with the study by [Sodikov, Rizaev, Chin, & Ochilova \(2021\)](#), which investigated the impact of national competitiveness on productivity and economic growth in selected post-Soviet countries. Their research emphasized the significance of the ICT adoption, macroeconomic stability, and infrastructure pillars in influencing national competitiveness and, subsequently, economic growth.

Furthermore, the influence of the macroeconomic stability pillar on economic growth in Java aligns with the findings of [Norehan, Ridzuan, & Ismail \(2021\)](#). Their study highlighted the pivotal role of ICT development and foreign direct investment inflows in driving economic growth, especially in countries like China and Malaysia. Lastly, the significant impact of the ICT adoption pillar on economic growth in Java resonates with the research by [Fawaz, Popiashvili, & Mnif \(2021\)](#), which examined the effects of telecommunications infrastructure on economic growth in Latin American countries. Their findings underscored the positive relationship between economic growth and factors such as electricity access, internet accessibility, and ICT imports.

Considering the above comparisons, it is evident that the pillars of infrastructure, macroeconomic stability, and ICT adoption are not only pivotal for Central Java but also for various other regions and countries. The consistent findings across different studies emphasize the universal importance of these pillars in shaping the economic trajectory of regions. Policymakers and stakeholders should, therefore, prioritize investments and strategies in these areas to foster sustainable economic development globally.

Conclusion

This research underscores the pivotal role of infrastructure, ICT, and macroeconomic stability in driving economic growth in Central Java. Utilizing a robust multiple linear regression analysis, the study conclusively demonstrates that these independent variables collectively exert a significant influence on the region's economic growth rate. Individually, each of these factors—infrastructure, ICT, and macroeconomic stability—has been identified to have a substantial positive correlation with economic growth.

The findings of this research emphasize the necessity for well-rounded and strategic macro-socioeconomic policies to bolster the economic growth trajectory in Central Java. Such policies should be designed with

a keen understanding of the region's unique challenges and opportunities. Looking ahead, future research can expand the scope by incorporating additional independent variables and exploring other facets of the regional competitiveness index. Moreover, to achieve a more nuanced understanding of the dynamics over time and across different districts, employing a panel data regression model in subsequent studies would be a valuable approach. This comprehensive approach ensures that policy recommendations are both data-driven and tailored to Central Java's specific needs, paving the way for sustainable economic development in the region.

References

- Aloko, S. M. A., & Abdullahi, U. (2018). Corruption and Underdevelopment in Nigeria: Challenges and Solutions. *Scientific Research Journal*, VI(VII), 1-10. <https://doi.org/10.31364/scirj/v6.i7.2018.p0718538>
- Andrés, A. R., Asongu, S. A., & Amavilah, V. (2015). The Impact of Formal Institutions on Knowledge Economy. *Journal of the Knowledge Economy*, 6(4), 1034-1062. <https://doi.org/10.1007/s13132-013-0174-3>
- Badan Pusat Statistik. (2023). *Produk Domestik Regional Bruto Provinsi Jawa Tengah menurut Lapangan Usaha 2018-2022*. Semarang.
- Badan Riset dan Inovasi Nasional. (2023). *Indeks Daya Saing Daerah 2022*. Jakarta.
- Basyariah, N., Kusuma, H., & Qizam, I. (2021). Determinants of Sukuk Market Development: Macroeconomic Stability and Institutional Approach. *Journal of Asian Finance, Economics and Business*, 8(2), 201-211. <https://doi.org/10.13106/jafeb.2021.vol8.no2.0201>
- Bax, K., Bonaccolto, G., & Paterlini, S. (2023). Do lower environmental, social, and governance (ESG) rated companies have higher systemic impact? Empirical evidence from Europe and the United States. *Corporate Social Responsibility and Environmental Management*, 30(3), 1406-1420. <https://doi.org/10.1002/csr.2427>
- Burton, I., Huq, S., Lim, B., Pilifosova, O., & Schipper, E. L. (2002). From Impacts Assessment to Adaptation Priorities: the Shaping of Adaptation Policy. *Climate Policy*, 2(2-3), 145-159. <https://doi.org/10.3763/cpol.2002.0217>
- Calderón, C., & Servén, L. (2004). The Effects of Infrastructure Development on Growth and Income Distribution. In *Economía y Empresa* (No. WPS 3400). Washington, DC. <https://doi.org/10.1596/1813-9450-3400>
- Cardona, M., Kretschmer, T., & Strobel, T. (2013). ICT and productivity: Conclusions from the empirical literature. *Information Economics and Policy*, 25(3), 109-125. <https://doi.org/10.1016/j.infoecopol.2012.12.002>
- Destiningsih, R., Sugiharti, R. R., & Achsa, A. (2019). Food Commodity Competitiveness and Accessibility in Barlingmascakeb. *Jejak*, 12(1), 218-237. <https://doi.org/10.15294/jejak.v12i1.18783>
- Diener, E., & Suh, E. (1997). Measuring quality of life: Economic, social, and subjective indicators. *Social Indicators Research*, 40(1-2), 189-216. <https://doi.org/10.1023/a:1006859511756>
- Dolowitz, D. P., & Marsh, D. (2000). Learning from Abroad: The Role of Policy Transfer in Contemporary Policy-Making. *Governance*, 13(1), 5-23. <https://doi.org/10.1111/0952-1895.00121>
- Fawaz, F., Popiashvili, A., & Mnif, A. (2021). The effects of telecommunications infrastructure on Latin America's economic growth. *Problemas Del Desarrollo*, 52(206), 143-167. <https://doi.org/10.22201/IIEC.20078951E.2021.206.69627>
- Gentilini, U., & Webb, P. (2008). How are we doing on poverty and hunger reduction? A new measure of country performance. *Food Policy*, 33(6), 521-532. <https://doi.org/10.1016/j.foodpol.2008.04.005>
- Gujarati, D. (2004). *Basic Econometrics* (pp. 1-1002). pp. 1-1002. Singapura: McGraw-Hill Inc. Retrieved from <http://portal.belesparadisecollege.edu.et:8080/library/bitstream/123456789/2098/1/BasicEconomics-TheMcGraw-HillSeries.pdf>
- Kabeer, N. (2005). Gender equality and women's empowerment: A critical analysis of the third

- Millennium Development Goal. *Gender and Development*, 13(1), 13-24. <https://doi.org/10.1080/13552070512331332273>
- Keller, J., & von der Gracht, H. A. (2014). The influence of information and communication technology (ICT) on future foresight processes - Results from a Delphi survey. *Technological Forecasting and Social Change*, 85(2013), 81-92. <https://doi.org/10.1016/j.techfore.2013.07.010>
- Kuik, C.-C. (2021). Irresistible Inducement? Assessing China's Belt and Road Initiative in Southeast Asia. *Council on Foreign Relations*, 6(15). Retrieved from https://www.cfr.org/sites/default/files/pdf/kuik_irresistible-inducement-assessing-bri-in-southeast-asia_june-2021.pdf
- Lacy, P., Cooper, T., Hayward, R., & Neuberger, L. (2011). A New Era of Sustainability: UN Global Compact-Accenture CEO Study 2010. In *United Nations Global Compact*. <https://doi.org/10.1108/14720701111159208>
- Mahendra, E. (2015). Financial Dependence, Macroeconomic Stability, and Firm Growth: What Policy Implications for Indonesia? *Economics and Finance in Indonesia*, 57(2), 219. <https://doi.org/10.7454/efi.v57i2.39>
- Mokyr, J. (2009). Intellectual Property Rights, the Industrial Revolution, and the Beginnings of Modern Economic Growth. *American Economic Review*, 99(2), 349-355. <https://doi.org/10.1257/aer.99.2.349>
- Norehan, M. A. H. Bin, Ridzuan, A. R. Bin, & Ismail, S. B. (2021). Conceptual Framework for ICT Development and Foreign Direct Investment Inflows as Drivers for Sustainable Economic Growth: Evidence from China and Malaysia. *International Journal of Academic Research in Economics and Management Sciences*, 10(1), 123-134. <https://doi.org/10.6007/ijarems/v10-i1/9631>
- Pamela, Q., & Indrawati, L. R. (2022). Effect of Inflation, Exports, and Employment on Economic Growth in Central Java. *Research Horizon*, 2(5), 501-510. <https://doi.org/10.54518/rh.2.5.2022.501-510>
- Papagiannidis, S., Harris, J., & Morton, D. (2020). WHO led the digital transformation of your company? A reflection of IT related challenges during the pandemic. *International Journal of Information Management*, 55(June), 102166. <https://doi.org/10.1016/j.ijinfomgt.2020.102166>
- Ray, D., & Ing, L. Y. (2016). Addressing Indonesia's Infrastructure Deficit. *Bulletin of Indonesian Economic Studies*, 52(1), 1-25. <https://doi.org/10.1080/00074918.2016.1162266>
- Shi, J., Qi, C., & Mu, X. (2023). Accelerating the Construction of a Unified Domestic Market to Promote Sustainable Economic Development: Mechanisms, Challenges and Countermeasures—A Perspective Based on the General Law of the Market Economy and Chinese Reality. *Sustainability (Switzerland)*, 15(10), 1-16. <https://doi.org/10.3390/su15108329>
- Sodikov, A., Rizaev, Z., Chin, L., & Ochilova, S. (2021). Impact of National Competitiveness on Economic Growth and Income Level - Evidence From the Selected Post-Soviet Countries. *Research in World Economy*, 12(2), 17. <https://doi.org/10.5430/rwe.v12n2p17>
- Soekapdjo, S., Tribudhi, D. A., Hariyanti, D., & Nugroho, L. (2020). Factors Affecting Economic Growth in Central Java. *International Journal of Commerce and Finance*, 6(1), 155-165.
- Triyani, I., Adam, K., & Kristina, D. (2019). Strengthening Rural and Regional Economic Competitiveness Triggering Purworejo Regency Economic Growth through Tourism-Based Kutoarjo Transit Node Development. *The Indonesian Journal of Planning and Development*, 4(1), 19. <https://doi.org/10.14710/ijpd.4.1.19-28>
- Wahyuningrum, D., Mafruhah, I., & Mulyanto. (2022). Mapping of Regional Financial Capacity on Economic Growth in Central Java Indonesia. *International Journal of Economics, Business and Management Research*, 06(07), 142-158. <https://doi.org/10.51505/ijebmr.2022.6710>
- Walpole, R. E., Myers, R. H., Myers, S. L., & Ye, K. (2012). *Probability & Statistics for Engineers & Scientists*. Boston: Prentice Hall. Retrieved from https://spada.uns.ac.id/pluginfile.php/221008/mod_resource/content/1/ProbabilityStatistics_for_EngineersScientists%289th_Edition%29_Walpole.pdf
- Wang, B., Schlagwein, D., Cecez-Kecmanovic, D., & Cahalane, M. C. (2020). Beyond the Factory

Paradigm: Digital Nomadism and the Digital Future(s) of Knowledge Work Post-COVID-19. *Journal of the Association for Information Systems*, 21(6), 1379-1401. <https://doi.org/10.17705/1jais.00641>

Yusuf, A. A., & Sumner, A. (2015). Growth, Poverty and Inequality under Jokowi. *Bulletin of Indonesian Economic Studies*, 51(3), 323-348. <https://doi.org/10.1080/00074918.2015.1110685>