

The Nexus Between Zakat, Population, Scientific and Technical Journal Articles, and Economic Growth: Panel Data Analysis in Muslim-Majority Countries

Hubungan Antara Zakat, Penduduk, Artikel Jurnal Ilmiah dan Teknis, dan Pertumbuhan Ekonomi: Analisis Data Panel di Negara Mayoritas Muslim

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ABSTRACT

This research aims to analyze the factors that influence the economic growth of a country. This study involves a quantitative investigation using panel data regression in seven mainly Muslim nations from 2007 to 2020. The variables used in this research are zakat rate, population, the number of scientific and technical journal articles, and Gross Domestic Product (GDP). This research found that the variables of zakat rate, population, and scientific and technical journal articles have a partial effect on a country's economic growth. Furthermore, simultaneously, variables such as the zakat rate, population, and the number of scientific and technical journal articles also have a significant effect on economic growth. This research also found that zakat rate is the most influential factor in economic growth. First, the government should create effective policies to increase the level of zakat, such as implementing zakat policies as an income tax deduction. This is expected to enhance zakat collection. Second, stakeholders must collaborate to integrate zakat with other policy instruments to create a comprehensive policy framework.

Keywords: Economic Growth, Journal Articles, Population, Zakat

ABSTRAK

Penelitian ini bertujuan untuk menganalisis faktor-faktor yang memengaruhi pertumbuhan ekonomi suatu negara. Studi ini melibatkan investigasi kuantitatif menggunakan regresi data panel di tujuh negara mayoritas muslim dari tahun 2007 hingga 2020. Variabel yang digunakan dalam penelitian ini adalah tingkat zakat, populasi, jumlah artikel jurnal ilmiah dan teknis, dan Produk Domestik Bruto (PDB). Penelitian ini menemukan bahwa variabel tingkat zakat, populasi, dan artikel jurnal ilmiah dan teknis memiliki pengaruh parsial terhadap pertumbuhan ekonomi suatu negara. Selain itu, secara bersamaan (simultan) variabel tingkat zakat, populasi, dan jumlah artikel jurnal ilmiah dan teknis juga memiliki pengaruh signifikan terhadap pertumbuhan ekonomi. Penelitian ini juga menemukan bahwa tingkat zakat merupakan faktor paling berpengaruh dalam pertumbuhan ekonomi. Penelitian ini memberikan dua rekomendasi. Pertama, pemerintah harus menciptakan kebijakan efektif untuk meningkatkan tingkat zakat, seperti melalui kebijakan zakat sebagai pengurang pajak penghasilan. Ini diharapkan dapat meningkatkan pengumpulan zakat. Kedua, para pemangku kepentingan harus bekerja sama untuk mengintegrasikan zakat dengan instrumen kebijakan lainnya untuk menciptakan kerangka kebijakan yang komprehensif.

Kata Kunci: Pertumbuhan ekonomi, Artikel Jurnal, Populasi, Zakat

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I. INTRODUCTION

Economic growth is a pivotal indicator of a nation's economic advancement and is well-established in scholarly discourse. It illustrates the capacity of economic development to augment government revenue over time (Lamah et al., 2021). Gross Domestic Product (GDP) is a prominent measure of economic growth (Akbar, 2016). Economic growth is integral to a country's progress, and any decline therein can precipitate adverse effects such as rising unemployment and inflation, necessitating the implementation of corrective measures. Numerous factors influence a nation's economic growth, including Zakat, inflation rate, tax revenue, and population (Jedidia & Guerbouj, 2020; Khan & Khan, 2018; Mahat & Warokka, 2013; Nchege et al., 2019; Shaukat & Zhu, 2020; Suprayitno, 2020; Theodoris et al., 2017).

Zakat, in particular, emerges as a significant factor impacting economic growth (Jedidia & Guerbouj, 2020; Mahat & Warokka, 2013; Shaukat & Zhu, 2020; Suprayitno, 2020). Islamic and conventional economic systems diverge in principles, operational structure, and wealth redistribution mechanisms, with zakat playing a pivotal role in wealth redistribution within the Islamic framework. This mechanism facilitates the channeling of financial resources to beneficiaries on a microeconomic scale, while its macroeconomic effects encompass economic expansion, equitable wealth distribution, poverty alleviation, and bolstered social security (Haq, 2013).

Research by Jedidia & Guerbouj (2020) scrutinizes the impact of zakat on the economic development of eight Muslim-majority nations from 2004 to 2017. The study highlights zakat's role in stimulating economic growth by directing resources towards consumption, investment, or government expenditure, thereby fostering economic development. These findings align with those of Shaukat & Zhu (2020), who employed the Generalized Method of Moments (GMM) to analyze a simultaneous equation model using panel data across 38 countries, demonstrating a significant positive correlation between zakat rates and economic growth. Additionally, zakat implementation as a policy instrument correlates with reduced corruption and positively influences Foreign Direct Investment (FDI) and domestic investment.

This research investigates the impact of zakat rates and population and scientific and technical journal articles on economic growth across seven predominantly Muslim nations. The countries selected as samples for this research are Indonesia, Pakistan, India, Bangladesh, Nigeria, Egypt, and Turkey. These countries were chosen because they are among the top 10 countries with the largest Muslim populations in the world, according to Annur (2023), and based on the availability of accessible data to the public. This research extends previous studies limited to separate discussions regarding the influence of zakat rates and population and scientific and technical journal articles on economic growth. Therefore, this research aims to bridge the gap in the existing literature by analyzing the impact of zakat rates, population, and scientific and technical journal articles on economic growth in seven countries with a Muslim majority from 2007 to 2020 within one empirical model. The findings of this research are expected to contribute to providing input to the government as policymakers to enhance economic growth. Additionally, this research is expected to increase awareness among readers regarding the importance of zakat rates in the economy.

The paper unfolds as follows: Section 2 reviews existing literature, Section 3 outlines the methodology, Section 4 presents empirical findings, and Section 5 concludes the study, offering avenues for further research and policy implications.

II. LITERATURE REVIEW

Zakat

Zakat serves as a significant financial mechanism within the Islamic framework, offering a potential remedy to address prevailing socioeconomic challenges. This fiscal instrument plays a crucial role in redistributing wealth and income, aiming to support individuals in meeting their basic needs (Saripudin et al., 2020). Furthermore, zakat enhances communal welfare through the fair distribution of wealth, thereby contributing to societal advancement (Ratnasari & Rosyidi, 2019). Essentially, zakat entails the systematic allocation of a portion of one's assets, guided by specific criteria such as amount, lunar year, and conditions stipulated by Sharia law. These allocations are directed towards eligible recipients or *mustahiq* individuals, as delineated by Islamic principles (Kementerian Agama RI, 2013; Nabila & Herianingrum, 2020).

The term zakat prominently appears in various verses of the Quran, often alongside instructions related to prayer, as exemplified in QS. Al-Baqarah verse 43. The multifaceted nature of zakat highlights its significance not only as a financial tool but also as a means to fulfill religious obligations

and promote societal well-being.

وَأَقِيمُوا الصَّلَاةَ وَآتُوا الزَّكَاةَ وَارْكَعُوا مَعَ الرَّاكِعِينَ

Meaning: "And establish prayer and give zakāh and bow with those who bow (in worship and obedience)."

From the verse mentioned above, it's clear that fulfilling the duty of zakat is equally important as observing prayers in the lives of Muslims. Zakat, known as the third pillar of Islam and required for all believers, plays a crucial role in strengthening the spiritual bond with Allah SWT through worship and substantially contributing to the socioeconomic structure of communal life. The multifaceted nature of zakat highlights its dual significance, stressing not only the spiritual dedication inherent in worship but also the significant influence it has on broader aspects of community welfare and prosperity (Halimatussa'idah & Prasetyo, 2021; Iqbal, 2020; Nabila & Herianingrum, 2020).

Zakat plays a vital role in ensuring fair income distribution and significantly impacts the economic dynamics of a community. As posited by Azam et al., (2014), the impact of zakat extends beyond mere financial transactions, contributing significantly to the overall well-being of the Pakistani populace. Additionally, the effectiveness of zakat in reducing poverty is highlighted by findings from the Fuzzy approach, demonstrating its significant ability to reduce poverty levels in Tunisia. Essentially, zakat emerges as a multifaceted tool capable of promoting economic stability and serving as a catalyst for improving societal welfare and alleviating poverty, as supported by empirical evidence (Bouanani & Belhadj, 2020). A comprehensive study conducted by Jedidia & Guerbouj (2020) found that zakat is crucial in stimulating economic growth within countries. From 2004 to 2017, encompassing eight Muslim nations, the study sheds light on how zakat funds contribute to increasing consumption, investment, and government expenditure, essential components that collectively drive economic progress.

The importance of zakat as a mandatory mechanism for empowering individuals to support those in need is emphasized by Aziz et al., (2020). Their findings reinforce the idea that zakat helps alleviate poverty and plays a crucial role in guiding Pakistan towards achieving Sustainable Development Goals (SDGs). The study establishes a direct link between zakat and multidimensional poverty reduction, confirming its diverse impact on societal well-being. Furthermore, Shaukat & Zhu (2020) contribute to this discussion by revealing the statistically significant positive effects of zakat on Foreign Direct Investment (FDI) and domestic investment. Additionally, zakat emerges as a potent tool in combating corruption. These findings collectively support the assertion that, within the realm of Islamic economics, zakat functions not only as a charitable practice but also as a strategic instrument facilitating community welfare, equitable wealth distribution, and economic growth. The intricate relationship between zakat and various economic aspects positions it as a cornerstone in pursuing comprehensive societal prosperity.

Zakat, recognized as an Islamic institution, serves dual purposes, reflecting its divine and human or social dimensions (Syafiq, 2015). This places zakat as a crucial element within Islamic philanthropy, capable of contributing to societal well-being when managed effectively. In the social sphere, zakat has the potential to act as a catalyst for improving individual welfare. Insights from previous studies conducted by Jedidia & Guerbouj (2020); Mahat & Warokka (2013); Suprayitno (2020); and Shaukat & Zhu (2020) collectively highlight that the zakat rate demonstrates a positive correlation, leading to a significant impact on economic growth. However, contrasting findings arise from the research of Mahfuzha et al., (2019), which challenges the prevailing narrative by suggesting that zakat has no discernible effect on economic growth in four Southeast Asian nations. Against this backdrop of differing viewpoints, the research hypothesis can be formulated as follows:

H1: The zakat rate has a positive and significant relationship to the GDP per capita in Muslim-majority countries

The Scientific and Technical Journal Articles

Innovation is commonly understood as generating unique and original ideas requiring a systematic and imaginative approach (Stenberg, 2017). A critical measure of innovation lies in scientific and technical journal articles, considered the most reliable indicators, explaining approximately 60% of the variability (Amirat & Zaidi, 2020). Scientific and technical journal articles play a crucial role in influencing the economic growth of a country. Through research conducted in various fields of science and technology, these articles generate new information and discoveries that can enhance efficiency, productivity, and innovation (Maradana et al., 2017). This leads to opportunities for creating new products, enhancing production processes, and advancing various industries.

Furthermore, scientific and technical journal articles can generate more employment opportunities. Efficient government policies can also help reduce instances of reverse engineering attempts. Moreover, with supportive government interventions, increased research output can foster the development of innovative products, promoting technological advancement and economic growth within a country (Cetin, 2013). Several studies, including those conducted by Cetin (2013) and Kaya & Engkuchik (2021), have emphasized the significant influence of scientific and technical journal articles on economic growth. Building upon this existing research, it is hypothesized that the relationship between innovation, particularly as reflected in scientific and technical journal articles, and economic growth serves as the foundation for the research hypothesis:

H2: The scientific and technical journal articles have a positive and significant relationship to the GDP per capita in Muslim-majority countries

Population

The issue of population plays a crucial role in the developmental path of a nation, as unchecked population growth can lead to adverse effects on economic advancement. However, the economic impact on the population largely depends on the populace's quality (Bakhri et al., 2021). Previous studies by Saidi & Zaidi (2019) and Theodoris et al., (2017) highlight a positive correlation between population and GDP per capita, confirming the significant influence of population dynamics on economic indicators. Conversely, a different outcome arose from the analysis conducted by Dawson & Tiffin (1998), focusing on the relationship between population growth and economic conditions, particularly in India. Their study found that population growth had no apparent effect on per capita income growth and vice versa. Drawing from the insights provided by previous research efforts, the proposed research hypothesis is formulated as follows:

H3: Population has a positive and significant relationship with GDP per capita in Muslim-majority countries.

III. RESEARCH METHODS

This study involves a quantitative investigation using panel data to examine the complex relationship between the zakat rate and population and the publication of scientific and technical journal articles concerning economic growth in seven mainly Muslim nations from 2007 to 2020. The countries under analysis include Indonesia, Pakistan, India, Bangladesh, Nigeria, Egypt, and Turkey. In empirical research methodologies, combining cross-sectional and time series data provides unique advantages, offering detailed insights and a comprehensive understanding that may not be fully achieved by solely relying on panel data (Hsiao, 2003). The use of panel data in this study provides a broader range of information, resulting in greater degrees of freedom and decreased collinearity among the independent variables (Gujarati & Porter, 2015: 592). The dataset used for this research is obtained from secondary sources, specifically from World Bank publications. The empirical model utilized in this analysis can be outlined as follows.

$$\text{GDPit} = \alpha + \beta_1 \text{ZRit} + \beta_2 \text{JAit} + \beta_3 \text{POPit} + \varepsilon_{it} \quad (\text{Equation 1})$$

GDP represents the gross domestic product per capita, ZR denotes the zakat rate, POP signifies population, and JA stands for scientific and technical journal articles. The empirical model utilized in this study has been rigorously tested to ensure its reliability and robustness, evaluating classical assumptions such as heteroscedasticity and multicollinearity.

This study uses panel data regression analysis to examine how independent variables influence dependent variables over time (Srihardianti et al., 2016). Panel data offers several advantages. Firstly, controlling for individual differences. Panel data recognizes individuals, firms, states, or countries exhibit heterogeneity. Studies that do not control for this heterogeneity in time series and cross-sectional analyses risk producing biased results. Secondly, panel data provides more informative and variable data, reduces collinearity among variables, offers more degrees of freedom, and increases efficiency. Thirdly, panel data enables a better understanding of dynamic adjustment processes. While cross-sectional distributions may appear stable, panel data can reveal numerous underlying changes. Fourthly, panel data is more effective at identifying and measuring effects that may not be detectable in pure cross-sectional or time-series data (Baltagi & Boozer, 2005). In estimating the panel data regression model, there are three possible models: Pooled OLS, Fixed Effects Model (FEM), and Random Effects Model (REM) (Gujarati & Porter, 2015: 593-594). In panel data regression, there are techniques for selecting the best estimation model statistically, aiming to obtain the best estimation model (Caraka, 2017: 10). The Hausman test is

used in selecting the panel data regression estimation model in this research. Additionally, three statistical tests are used to test hypotheses in the research, namely the partial test (t-test), the simultaneous test (F-test), and the coefficient of determination (R²) to assess the accuracy of the independent variables.

In this research, the independent variables include the zakat rate, population, and the content of scientific and technical journal articles within a single analytical framework. Previous research has used various calculation proxies to examine the zakat rate variable, distributed from the zakat giver (muzakki) to the beneficiary (mustahik). A significant methodology involves using authentic data concerning allocating zakat funds in designated institutions. Alternatively, an index may approximate this allocation process, offering a comprehensive perspective on the complex mechanisms governing zakat distribution (Lestari & Auwalin, 2022). Due to the limited availability of data, the zakat rate in this study is estimated, following the approach taken by Mahat & Warokka (2013); Sarntisart (2016); Shaukat & Zhu (2020); and Bouanani & Belhadj (2019). In this study, the zakat rate is calculated from the estimated collection of investment zakat funds using the following formula, as used by Widiastuti et al., (2022).

$$\text{Zakat Rate} = 2.5\% * \text{Gross capital formation (current US)}$$

This study's secondary data source, which was used to estimate the independent variable, population, comprised comprehensive population statistics obtained from the World Bank database. Specifically, this study concentrates on gathering information about the total population across various regions and countries. The independent variable is crucial in comprehending the intricate dynamics and nuances of the research framework. Additionally, the study conducts an extensive analysis of the number of scientific and technical journal articles published in various academic fields, including physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering, technology, and earth and space science. Including such diverse disciplines ensures a comprehensive exploration of the scientific landscape, aiming to capture the multifaceted dimensions that may influence the research outcomes. The data on the number of scientific and technical journal articles was obtained from the World Bank data. Meanwhile, the dependent variable in this study is GDP per capita (in constant 2015 US dollars). The GDP data in this study is obtained from the World Bank database.

IV. RESULTS AND DISCUSSION

Result

The statistical description is presented in Table 1. In general, the seven countries in the sample had an average GDP per capita of 3,290 USD from 2007-2020, with the highest GDP per capita reaching 12,072 USD, which occurred in Turkey in 2020.

Table 1. Statistical description result

	ZR	JA	POP	GDP
Mean	5065328222	21810	323038491	3290
Median	2178737758	7215	177052569	2472
Maximum	21855360784	149213	1396387127	12072
Minimum	521029896	644	70468869	847
Std. Dev.	5635746540	31887	404494834	2989

Table 1 shows the mean zakat rate in the sample countries of this study from 2007 to 2020 is 5,065,328,222 USD, with a median value of 2,178,737,758 USD. The maximum zakat rate is 21,855,360,784 USD, India's zakat rate in 2018. Meanwhile, the zakat rate in Bangladesh in 2007 was 521,029,896 USD, the minimum gini ratio level.

The present study utilized proxy indicators to gauge the volume of scholarly publications generated by the World Bank across various scientific and technical disciplines. These disciplines encompassed physics, biology, chemistry, mathematics, clinical medicine, biomedical research, engineering, technology, and earth and space science. The investigation focused on scrutinizing the extent of the World Bank's contributions to the academic literature in these fields. The mean number of scientific and technical journal articles in this study is 21,810, and the median value is 7,215. The maximum number of scientific and technical journal articles was 149212 in India in 2020. Meanwhile, the minimum number of scientific and technical journal articles is 644, namely the publication of articles in Indonesia in 2007.

The entire population, as determined by World Bank data, is a proxy for this study's population.

Between 2007 and 2020, the sample countries' average population was 323,038,491, while their median was 177,052,569. The sample's maximum total population is 1,396,387,127, corresponding to India's entire population in 2020. In the meantime, the sample's minimum population is 70468869, corresponding to Turkey's entire population in 2007.

GDP per capita is used in this study as a proxy for the economic growth rate. The median GDP per capita in the sample is 2,472 USD, and the average is 3,290 USD. The sample's highest GDP per capita is 12,072 USD, corresponding to Turkey's GDP per person in 2020. In the meantime, Bangladesh's GDP per capita in 2007 was 847 USD, the minimal GDP per capita level.

Examining the interplay among the independent variables in the current investigation is elucidated through the presentation of the correlation relationship in Table 2. This correlation analysis serves the purpose of ascertaining the absence of correlation symptoms among the independent variables, commonly called multicollinearity. The pivotal criterion for evaluating multicollinearity involves assessing the correlation coefficient, specifically focusing on values surpassing the threshold of 0.90. In instances where the correlation coefficient exceeds this critical threshold, it can be reasonably inferred that issues on multicollinearity are highly probable within the model under scrutiny (Dohoo et al., 1996).

Table 2. Correlation Matrix

	ZR	JA	POP
ZR	1.00000	0.68093	0.61198
JA	0.68093	1.00000	0.43707
POP	0.61198	0.43707	1.00000

The multicollinearity test results in Table 2, no coefficient value between variables is greater than 0.90. In other words, no evidence of multicollinearity exists among the independent variables investigated in this study.

Gujarati & Porter (2015: 604-605) opined the selection of the best model in panel data regression analysis can be made using the Hausman Test. The findings of the Hausman test indicated that the Fixed Effect Model (FEM) was the most suitable model for the panel data regression in this study. The results of the panel regression analysis in this study are presented in Table 3 below.

Table 3. Panel Regression Results

Variable	Coefficient	t-Statistic	Prob.	Conclusion
C	-7.2904	-2.4510	0.0162	-
Ln_ZR	0.1865	4.96114	0.0000	Significant
Ln_JA	0.0695	3.31121	0.0013	Significant
Ln_POP	0.5442	3.23926	0.0017	Significant

This study conducted an F-test to determine whether the independent variables can simultaneously affect the dependent variable. The results of the F-test are presented in Table 4 below.

Table 4. Hasil Uji F

	Value
F-statistic	921.2069
Prob. (F-statistic)	0.0000

Based on Table 4, it is explained that the value of Prob (F-statistic) is 0.0000, where this value is smaller than the significance level of 5%. This means that the variables zakat rate, population, and the number of scientific and technical journal articles statistically simultaneously affect GDP. Furthermore, to determine the accuracy of the independent variables in this study, the coefficient of determination (R²) is used. Table 5 below shows the coefficient of determination values in this study.

Table 5. Values of R-square (R²)

	Nilai
R-squared	0.9882
Adj. R-squared	0.9884

The R-square (R²) value in this panel regression model is 0.9882. Therefore, the variations in the zakat rate, population, and the number of scientific and technical journal articles can explain 98.8% of the variation in the GDP.

Discussion

Based on panel data regression analysis, the zakat rate has a positive relationship and a significant impact on GDP per capita. This demonstrates that raising the zakat rate can stimulate economic growth in Muslim-majority countries. The findings of this study are consistent with the findings of Jedidia &

Guerbouj (2020), Mahat & Warokka (2013), Suprayitno (2020), and Shaukat & Zhu (2020). Zakat is an Islamic instrument with two-dimensional objectives, namely the divine and human or social dimensions (Syafiq, 2015). This implies that zakat is encompassed within the array of Islamic charitable mechanisms, capable of enhancing the well-being of individuals when administered effectively in societal contexts. From a social perspective, this study demonstrates that zakat can contribute to economic growth in countries with a Muslim majority. Described as a financial instrument, zakat operates as a levy on savings, fostering progressive economic initiatives within a financial framework and facilitating the attainment of a consistent rate of growth (Shaukat & Zhu, 2020). Zakat has the potential to contribute to the economic development of a nation, as it is a form of religious tax directed towards consumption, investment, or government expenditures. Consequently, these levies play a role in influencing both aggregate demand and overall economic expansion (Jedidia & Guerbouj, 2020).

Based on the panel data regression results, scientific and technical journal articles show a positive relationship and a significant impact on GDP per capita. This demonstrates that increasing the number of scientific and technical journal articles can boost economic growth in Muslim-majority countries. The findings of this study are consistent with the findings of Cetin (2013) and Kaya & Engkuchik (2021). Cetin (2013) argued an increased volume of scientific and technical journal articles has the potential to generate a greater number of employment opportunities. Furthermore, implementing effective government policies can play a pivotal role in minimizing the extent of reverse engineering activities. Additionally, when accompanied by supportive governmental measures, this surge in research output can foster the development of more innovative products, thereby contributing to technological advancements and economic growth within a country.

The correlation between population and GDP per capita is notably positive, indicating a substantial and meaningful influence on the economic dynamics of Muslim-majority nations. This suggests that a rise in a country's population within this demographic can act as a catalyst for fostering economic expansion. The interconnectedness between population growth and increased GDP per capita underscores the intricate relationship between demographic factors and economic development within Muslim-majority regions. The findings of this study are consistent with the findings of Theodoris et al., (2017). Due to the considerable size of a nation's populace, the prospect of harnessing it as a substantial market force exists, given that it serves as a fundamental wellspring of demand for an extensive array of goods and services. This, in turn, can stimulate and propel a diverse spectrum of economic activities, creating a robust and dynamic economic landscape (Theodoris et al., 2017).

The results underscore the significant impact that factors such as zakat rate, population, and scientific and technical journal articles have on a country's economic growth. The novelty of this research finding lies in the fact that the zakat rate, population, and scientific output in the scientific and technical fields when implemented together in policies, can have a significant impact on the economic growth of a country. Based on the findings of this research, zakat is identified as the most influential factor in a country's economic growth, thus leading to several recommendations. Firstly, the government should strive to be an effective policy maker in increasing the zakat rate, such as through implementing policies for zakat deductions in income tax. This policy is expected to enhance the collection of zakat funds from the public. Secondly, all stakeholders should collaborate to integrate zakat with other policy instruments to create a comprehensive policy framework. Thirdly, it is recommended that real data on zakat distribution be utilized in further research to produce more comprehensive findings.

V. CONCLUSION

This study aims to investigate the impact of the zakat rate and population and the scientific and technical journal articles on the economic growth of a country. This research found that the zakat rate, population, and the scientific and technical journal articles partially impact a country's economic growth. Furthermore, the novelty of the findings in this research lies in the simultaneous impact of variables such as zakat rate, population, and scientific and technical journal articles on the economic growth of a country. This research also found zakat to be the most influential factor in economic growth and provided some recommendations. First, governments should implement effective policies to increase zakat levels, such as tax deductions for zakat in income tax. This is expected to enhance the zakat collection. Second, stakeholders should collaborate to integrate zakat with other policy instruments to create a comprehensive framework. Finally, future research should utilize real data on zakat distribution for more comprehensive findings.

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