

Model to Stimulate Economic Growth in Indonesia

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A BSTRA CT

Educational investment as part of *human capital development* is a crucial strategy in increasing competitiveness and driving economic growth of a nation. However, in developing countries like Indonesia, there is still a gap between theory and practice, particularly in the effectiveness of implementing education financing models. This study aims to formulate a relevant *human capital- based education financing model* capable of driving inclusive and sustainable economic growth. Using a systematic literature study approach to scientific publications and national-international policy documents over the past decade (2014–2024), it was found that education financing schemes focused on improving the quality of human resources have a positive impact on labor productivity and Gross Domestic Product (GDP) growth. The findings demonstrate the importance of implementing *outcome-based budgeting*, diversifying funding sources, and cross-sector synergy in formulating education financing policies. The proposed conceptual model positions human resource quality as the main indicator of the effectiveness of education investment. In conclusion, education financing strategies must be designed contextually, collaboratively, and output-oriented to encourage inclusive and sustainable economic growth.

Keywords : *Human Capital, Education Financing, Economic Growth, Education Policy, Development Strategy.*

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INTRODUCTION

Education has long been recognized as a key pillar of sustainable economic development. From a modern economic perspective, education is no longer viewed solely as a public good, but rather as a strategic investment in *human capital*, namely the accumulation of knowledge, skills, and competencies that contribute to increased labor productivity and national economic growth (Becker, 1993; Hanushek & Woessmann, 2015). The Organization for Economic Co-operation and Development (OECD) confirms that improving the quality of education has a strong positive correlation with Gross Domestic Product (GDP) growth through increased output per worker (OECD, 2020).

However, developing countries like Indonesia still face serious challenges in designing an education financing system capable of equitably creating high-quality *human capital*. According to World Bank data (2021), Indonesia's education budget allocation is only around 3.0–3.5% of GDP, lower than ASEAN countries such as Vietnam (4.5%) and Malaysia (5%). Furthermore, Indonesia's Human Capital Index (HCI) score in 2020 was only 0.54, meaning that Indonesian children are currently projected to achieve only 54% of their potential productivity as adults when compared to ideal education and health standards (World Bank, 2020).

This situation reflects the gap between theory and practice in education financing. The *input-based financing system* (budget- and administrative-oriented) has not optimally supported *human capital development* that is adaptive to job market needs and global challenges. Therefore,

a more strategic and *output-oriented financing approach* is needed, emphasizing tangible results and impacts on productivity and economic growth.

Several studies have shown that a *human capital investment- based education financing model* can improve the efficiency of fund allocation, equitable access to education, and the quality of learning outcomes (Tan et al., 2020; Psacharopoulos & Patrinos, 2018). This model emphasizes that education spending should not be solely oriented toward physical or administrative development, but rather directed toward developing competencies relevant to economic transformation, social inclusion, and technological innovation.

National policy directions have also supported this transformation. The 2020–2024 National Medium-Term Development Plan (RPJMN) explicitly prioritizes the development of superior human resources toward the vision of Golden Indonesia 2045 (Bappenas, 2020). However, few studies explicitly and contextually integrate education financing policies with economic development indicators.

The novelty of this study lies in its systematic approach to developing and analyzing a human capital-based education financing model through a literature review that explicitly links education financing strategies to economic growth indicators. Although the concepts of human capital and education financing have been widely discussed in the literature, this study synthesizes empirical and theoretical findings from the past 10 years to formulate a conceptual model that can be applied contextually in Indonesia.

Most previous studies have addressed the topics of education financing and human capital separately or focused on the educational outcome aspect without directly linking it to national economic growth (Psacharopoulos & Patrinos, 2018; Hanushek & Woessmann, 2020). Therefore, this study offers an integrative approach that has not been widely used, namely examining how education financing schemes (*public-private financing, outcome-based budgeting, investment in early childhood education, etc.*) can be modeled as drivers of human capital accumulation and long-term economic growth, based on a valid and scientifically accountable literature review.

Using a systematic literature review (SLR) method, this study develops a theoretical and empirical framework regarding the relationship between education financing, human capital formation, and economic growth. This is then formulated into a conceptual model as a theoretical contribution to the development of education policies in developing countries. This model also considers Indonesia's contextual factors such as the demographic bonus, education gaps, and regional disparities, which are often overlooked in global studies.

METHOD

This research uses a qualitative approach with an exploratory and conceptual literature review. The literature review was chosen to *formulate* a relevant and adaptive human capital-based education financing model to drive economic growth, through an in-depth synthesis and analysis of various credible and academically accountable scientific sources and public policies.

The data sources in this study include secondary literature consisting of national and international indexed scientific journal articles (Scopus, Sinta, DOAJ, Google Scholar), particularly in the last 10 years (2014–2024) that discuss the topics of education financing, human capital, and economic growth. Scientific books from trusted academic publishers that review the economic theory of education, human capital theory, and financing models. National and international policy documents, such as the 2020–2024 National Medium-Term Development Plan (RPJMN), the Ministry of Education, Culture, Research, and Technology policies, OECD (2020), UNESCO (2022), and World Bank (2021) reports related to human capital and education. Secondary empirical data, such as the Human Capital Index (HCI), education expenditure data from the World Bank and BPS, as well as national economic growth data and human development indicators. Literature selection was carried out purposively based on criteria of direct relevance to the research theme, academic quality, and relevance to the context of education policy and economic development.

The *systematic literature review* process was conducted following the guidelines of Tranfield et al. (2003) which consists of three main stages, namely Planning the Review by determining the focus and main research question: *How can a human capital-based education financing model encourage inclusive economic growth in developing countries like Indonesia?*, and determining inclusion and exclusion criteria: The selected literature was published between 2014–2024, available in Indonesian or English, relevant to education financing and human capital, and containing data or theories that can be analyzed conceptually and empirically. Conducting the Review, literature searches were conducted through academic databases (Scopus, Google Scholar, Sinta, DOAJ) and institutional sources (OECD, UNESCO, World Bank, Bappenas), literature selection was carried out in layers through *screening* titles, abstracts, and full content to ensure relevance and academic quality, eligible literature was analyzed using content analysis techniques, thematic and comparative approaches. Reporting and Synthesizing the Review is a thematic analysis conducted to identify and group main themes such as: *outcome-based education financing models*, the role of *human capital* in economic development, and the effectiveness of education investment schemes, comparative analysis is used to compare the practices and results of implementing education financing policies in various countries (especially developing countries) that have similar characteristics to Indonesia, and the results of the synthesis are arranged in the form of a conceptual model as a theoretical and practical contribution to the discourse on education financing and economic development.

The data analysis technique used in this study is content analysis with a thematic and comparative approach. Thematic analysis was conducted to identify, group, and synthesize the main themes emerging from various literatures, such as: outcome-based education financing models, the concept of human capital development, and the relationship between investment and economic growth. Meanwhile, comparative analysis was used to compare findings across literatures based on geographic context, policies, and the effectiveness of the implementation of education financing models in promoting human capital in various countries, especially developing countries that have similar characteristics to Indonesia. The analysis process followed systematic stages based on the systematic literature review guidelines as suggested by Tranfield et al. (2003) and was complemented by validation of thematic structures to produce a complete, credible literature synthesis that can be used to formulate a conceptual model as a theoretical and practical contribution to the research.

FINDINGS AND DISCUSSION

Based on the results of literature studies on various empirical and theoretical studies, several important findings were found regarding the relationship between *human capital-based education financing* and economic growth, as follows:

Education as a Strategic Instrument for Economic Development:

Lucas (1988) and Romer (1994) emphasize that investment in education plays an important role in increasing labor productivity and driving economic growth through increasing human capacity and disseminating knowledge.

The Effectiveness of Education Financing is Still Limited: Kristyanto & Kaluge (2018) found that investment in education and health in East Java contributed significantly to economic growth. However, education funding impacted quantity rather than quality.

Human Capital as a Driver of Knowledge-Based Economy: Rohimah (2021) emphasized the strategic role of education in creating a *knowledge-based economy* and highlighted the challenge of Indonesia's low *Human Capital Index* (0.53) as evidence of weak financing effectiveness.

Strategic Financing for Inclusive Growth: Wujarso (2022) shows that education and health contribute significantly to increasing labor productivity and GDP per capita, and suggests the need for financing integration in fiscal policy.

Cross-Sector Collaboration through CSM: Sugiat (2020) offers a *Collaborative Strategic Management approach* that emphasizes synergy between government, industry, and educational institutions in financing and developing *human capital*.

Contextual Implementation in Educational Units: Rakhmawati (2023) showed that the RKAS in vocational schools can be directed towards strengthening human resources through the utilization of BOS, BPOPP, and industrial partnership funds.

Positive Relationship between HDI and Economic Growth: Engellina et al. (2024) showed that the *Human Development Index* (HDI) had a significant positive correlation with Indonesia's economic growth (2018–2022), emphasizing the importance of investing in human quality.

Effect of Education Expenditure on Poverty: Muhammad Hatta (2018) found that education and health spending reduced poverty in the Ajatappareng region, with human resource quality as a mediating variable.

Collaborative Financing Structure for Education Quality: Rifki Alam (2021) suggests education financing based on the roles of the state, society, and individuals through the integration of conventional and innovative funding such as *fintech* and *industrial CSR*.

Discussion

In the context of human capital theory developed by Lucas (1988) and Romer (1994), they assert that investment in education is a strategic tool for increasing labor productivity, accelerating economic growth, and reducing poverty and unemployment. However, effective financing remains a challenge, especially if it is not accompanied by improvements in educational quality (Kristyanto & Kaluge, 2018).

Kristyanto and Kaluge (2018) examined the relationship between human capital investment financing and economic growth in East Java Province. The results showed that investment in the education and health sectors contributed significantly to economic growth. However, they also noted that education financing tended to focus more on quantity than quality, thus not optimally driving inclusive economic growth. This finding emphasizes the importance of effective use of education funds to truly increase human resource capacity equitably across all levels of society.

In her study, Rohimah (2021) emphasized the importance of educational investment as a key component in developing quality human capital. Education not only plays a role in increasing individual productivity but also serves as a strategic instrument in creating a knowledge-based economy that drives long-term economic growth.

In this context, effective and equitable education financing is considered the most important investment for developing countries like Indonesia. However, Indonesia's low Human Capital Index (0.53) indicates that serious challenges remain in developing education financing policies. Therefore, a human capital-based education financing model needs to be designed not only to increase the quantity of educational access but also to strengthen the quality of human resources through a financing strategy integrated with national economic development (Rohimah, 2021).

Thus, these findings confirm that the design of a *human capital-based education financing model* must focus on integrating the quantity and quality of education. This includes effective fund allocation, outcome-based financing, and integration between education policy and national economic development strategies. Funding that is not merely administrative and sectoral, but strategic and cross-sectoral, will be key to producing superior human resources capable of driving inclusive and sustainable economic growth.

In the context of a developing country like Indonesia, investment in *human capital* is a key strategy for driving inclusive and sustainable economic growth. Wujarso (2022) emphasized that the two main components of *human capital* –education and health– contribute significantly to labor productivity and increase Gross Domestic Product (GDP) per capita. Education financing, in this context, is not merely an administrative instrument, but

rather a long-term development strategy that can reduce social disparities and accelerate the structural transformation of the national economy. Countries such as China, India, South Korea, and Finland have become successful examples because they have integrated *human capital investment* into the framework of fiscal policy and national education development in a planned and sustainable manner.

Furthermore, Sugiat (2020) expanded this argumentative framework by offering the *Collaborative Strategic Management* (CSM) approach as a synergistic strategy for strengthening *human capital*. Although it does not directly address education financing, this approach emphasizes the importance of collaboration between government, industry, and educational institutions as a key pillar in developing superior human resources, particularly in the digital era and facing the challenges of the demographic dividend. This opens up important opportunities for the development of an adaptive and industry-based education financing model, where funding responsibility is not solely delegated to the government but also involves contributions from the private sector and the community through a public-private partnership (PPP) scheme.

Sugiat's (2020) article emphasizes that strengthening human resources through continuous education and training can have a multiplicative effect, including increased productivity, reduced unemployment, and preparedness to face the challenges of the demographic dividend. The proposed concrete strategies include strengthening vocational education, skills certification, providing industry-based educational facilities, synergies between universities and the business world, and talent diversity. Therefore, a *human capital-based education financing model* needs to be designed flexibly and contextually, adopting a participatory and collaborative approach that aligns with the dynamics of economic transformation and future skills needs.

The integration of these approaches can serve as a conceptual basis for building an education financing system that is not only responsive to global challenges, but also capable of driving accelerated national economic growth based on innovation and superior human resource productivity.

The concept of *human capital* as a strategic instrument in driving economic growth is not only relevant at the national macro level but also has significant applications at the micro level of educational units. A study by Rakhmawati (2023) shows that the *School Activity and Budget Plan* (RKAS) is a concrete form of an education financing model strategically directed at developing human resource capacity at the vocational high school level. By optimizing the allocation of funds from sources such as BOS, BPOPP, and community participation, the RKAS is utilized for teacher training (*upskilling*), student competency development, partnerships with industry (DUDI), and the provision of technological tools and learning facilities. This reflects that education financing oriented towards *human capital development* not only improves the quality of education but also strengthens graduates' competitiveness in the labor market and has a direct impact on the regional economy.

This finding is reinforced by a macroeconomic study by Engellina et al. (2024) which uses the *Human Development Index* (HDI) as an empirical representation of *human capital quality*. Through multiple linear regression analysis of Indonesian data for the 2018–2022 period, this study proves that the HDI—which includes indicators of education, health, and per capita income—has a positive and significant relationship with national economic growth. This finding confirms the *Human Capital theory* proposed by Schultz (1961) and Becker (1993), which states that investment in education and health is a productive long-term development instrument and contributes to sustainable economic growth.

Furthermore, Engellina et al. (2024) highlighted that increasing the HDI not only impacts productivity and labor efficiency but also strengthens people's purchasing power, expands the real sector, and strengthens the domestic market. Furthermore, the integrative approach offered through synergy between new and renewable energy (EBT) investment, digital financial innovation (*fintech*), and *human capital development* opens up new conceptual space for collaborative and intersectoral education financing. This aligns with the direction of education financing transformation, which is no longer entirely dependent on government

fiscal allocations but is beginning to involve alternative financing mechanisms such as industry CSR, *fintech-based education financing*, and cross-sector strategic partnerships.

Thus, findings from both the educational unit level (Rakhmawati, 2023) and the national macroeconomic perspective (Engellina et al., 2024) provide a strong empirical basis for demonstrating that a *human capital-based education financing model* is a relevant and adaptive approach to supporting economic growth. Going forward, this strategy needs to be developed within an integrated, flexible, and participatory public policy framework to address global economic challenges and 21st-century skills needs.

Furthermore, Muhammad Hatta (2018) in his regional study showed that government spending in the education and health sectors had a significant negative effect on poverty levels in the Ajatappareng region, with human resource quality as the main mediating variable. Through *Structural Equation Modeling (SEM) analysis*, it was found that the impact of education spending was only effective if it was channeled in the form of improving human resource quality. This finding confirms the *endogenous growth theory model* (Romer, 1990), where economic growth stems from the accumulation of knowledge and skills through educational investment, not just the accumulation of physical capital. Therefore, the effectiveness of financing is crucial, not only in terms of nominal value but also the direction of its use policy.

In the context of educational quality, Rifki Alam (2021) emphasized that quality education is the primary foundation for long-term economic development. Quality education not only produces a skilled workforce but also increases the relevance of graduates to the needs of the workforce and industry. This article emphasizes the importance of education financing in ensuring quality delivery, by dividing the financing structure into state, community, and individual components. This leads to the need to develop an integrative and collaborative education financing model—involving the private sector, industry CSR, and financing innovations such as *fintech* and *edtech financing*—to ensure the sustainability of inclusive *human capital development*.

Various theoretical and empirical studies show that a *human capital-based education financing model* is a strategic approach to strengthening human resource productivity, promoting inclusive economic growth, and reducing social inequality and poverty, particularly in developing countries like Indonesia. Endogenous growth theory (Lucas, 1988; Romer, 1994) asserts that investments in education and health contribute directly to long-term economic growth through improving workforce quality and knowledge accumulation.

However, the effectiveness of education financing remains a major challenge, particularly when funding allocation focuses solely on quantitative aspects without being accompanied by improvements in the quality and relevance of education. Empirical findings indicate that strategically designed, participatory, and cross-sectoral financing—through collaboration between government, industry, and educational institutions—has the potential to significantly impact *human capital* and national economic competitiveness.

Approaches such as *Collaborative Strategic Management* and Public-Private Partnerships (PPPs) allow for diversification of funding sources through industrial CSR schemes, *fintech innovation*, and *edtech financing*. At the micro level, optimizing the management of the National Work Plan (RKAS) has proven effective in supporting teacher training, improving student competencies, and strengthening the connection between education and job market needs. Meanwhile, at the macro level, the positive correlation between improvements in the Human Development Index (HDI), poverty reduction, and national economic growth provides important evidence that investment in education integrated with development strategies provides multidimensional benefits.

Education financing policy formulation needs to shift from an *input-based* to an *outcome-based approach*, emphasizing learning outcomes, competency development, and their impact on economic productivity. Central and regional governments need to establish cross-sectoral collaborative mechanisms, including encouraging the active participation of the private sector and communities in education financing schemes through PPP, education CSR, and alternative financing based on financial technology (*fintech*). Education budgeting reforms must be data-driven and contextual, taking into account regional disparities, future skills need,

and national demographic projections. Integration between education, employment, and macroeconomic policies needs to be strengthened to ensure that education investments produce a productive, adaptive, and globally competitive workforce.

Suggestions for further research include the need for quantitative studies based on longitudinal data to empirically measure the impact of education financing on economic indicators, such as GDP growth, unemployment rates, and the Human Development Index (HDI) at the provincial or district level. An evaluative study of the implementation of outcome-based budgeting in the education sector could provide a more concrete picture of the effectiveness of this approach in the Indonesian context. Comparative research across developing countries on *human capital-based education financing models* could enrich global perspectives and provide contextual policy inspiration. Exploring the potential of education financing based on digital innovation and the creative economy, including *blockchain*, *token-based education funding*, and *impact investment*, to support inclusive and sustainable education.

CONCLUSIONS

A human capital-based education financing model is widely recognized as a strategic tool to enhance human resource productivity, drive inclusive economic growth, and reduce poverty and social inequality—especially in developing countries like Indonesia. Rooted in endogenous growth theory (Lucas, 1988; Romer, 1994), investments in education and health contribute directly to long-term economic growth by improving workforce quality and fostering knowledge accumulation. However, the effectiveness of education financing often faces challenges when funds are allocated based only on quantitative metrics without attention to education quality and relevance. Empirical studies suggest that financing strategies that are participatory, strategically planned, and cross-sectoral—through collaboration between governments, industry, and educational institutions—can significantly boost human capital development and national competitiveness. Collaborative Strategic Management and Public-Private Partnerships (PPPs) enable diversified funding sources, such as industrial CSR programs, financial technology (fintech), and educational technology (edtech) innovations. At the school level, optimizing the management of the National Work Plan (RKAS) has shown effectiveness in supporting teacher training and aligning education with job market needs. At the national level, data demonstrate a strong link between improved Human Development Index (HDI), economic growth, and poverty reduction, supporting the integration of education investments with broader development strategies. Therefore, education policy must shift from input-based to outcome-based budgeting—focusing on learning outcomes, skill development, and economic productivity. Governments should adopt data-driven, regionally contextualized policies, promote private and community participation, and explore innovative financing models, including blockchain and impact investments. Further research should empirically assess these strategies using longitudinal data and comparative analysis across developing nations.

REFERENCES

- Alam, R. (2021). Esensi mutu pendidikan dalam membangun ekonomi generasi masa depan. *Reslaj: Religion Education Social Laa Roiba Journal*, 3(1), 102–109.
- Bappenas. (2020). *Rencana Pembangunan Jangka Menengah Nasional (RPJMN) 2020–2024*.
- Becker, G. S. (1993). *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd ed.). University of Chicago Press.
- Cecilia, P. E., Zahro, A., & Budianto, E. W. H. (2024). Mapping the future of the economy: Synergy of EBT investment, human resource development, and fintech innovation. *Formosa Journal of Sustainable Research*, 3(9), 1997–2010.
- Hanushek, E. A., & Woessmann, L. (2015). *The knowledge capital of nations: Education and the economics of growth*. MIT Press.

- Hatta, M. (2018). Pengaruh pengeluaran pemerintah pada bidang pendidikan dan kesehatan terhadap kemiskinan di wilayah Ajatappareng. *Economos: Jurnal Ekonomi dan Bisnis*, 1(3), 39–48.
- Kristyanto, V. S., & Kaluge, D. (2018). Peningkatan inklusivitas ekonomi melalui pembiayaan investasi modal manusia. *Jurnal Ekonomi Kuantitatif Terapan*, 11(2), 182–189.
- OECD. (2020). *Education at a glance 2020: OECD indicators*. OECD Publishing.
- Psacharopoulos, G., & Patrinos, H. A. (2018). Returns to investment in education: A decennial review of the global literature. *Education Economics*, 26(5), 445–458.
- Rakhmawati, S. Y. (2023). Optimalisasi RKAS dalam meningkatkan mutu sekolah melalui pengembangan human capital di SMKN 3 Tuban. *Jurnal Manajemen Riset Inovasi (MRI)*, 1(3), 58–66.
- Rohimah. (2021). Knowledge-based economy sebagai investasi human capital mendorong pertumbuhan ekonomi bangsa. *Tahdzib Al Akhlak: Jurnal Pendidikan Islam*, 4(1), 29–44.
- Sugiat, M. A. (2020). Pengembangan SDM unggul berbasis collaborative strategic management. *SULTANIST: Jurnal Manajemen dan Keuangan*, 8(1), 1–8.
- Tan, C., Yusof, M., & Nor, N. (2020). Financing education for human capital development: Policy insights from Malaysia. *Asian Education and Development Studies*, 9(3), 335–349.
- World Bank. (2020). *Human capital index 2020 update: Human capital in the time of COVID-19*.
- World Bank. (2021). *Indonesia public expenditure review: Spending for better results*.
- Wujarso, R. (2022). Peran human capital dalam pertumbuhan ekonomi. *Journal of Information System, Applied, Management, Accounting and Research (JISAMAR)*, 6(2), 430–438.