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Educational Innovation in Human Capital Ecosystem to Boot Indonesia's Digital Investment Appeal

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Abstract. The quality of human capital is a key determinant in attracting foreign direct investment (FDI), especially within high-technology sectors where innovation, adaptability, and workforce readiness are critical. Despite having a vast digital consumer base, Indonesia has failed to attract investment from global technology leaders such as Apple, signaling deeper structural challenges within its human resource (HR) ecosystem. This study aims to investigate how HR-related constraints including competency gaps, misalignment between education and industry, and ineffective incentive policies influence multinational investment decisions. Employing a qualitative case study approach, the research integrates netnographic observations with thematic content analysis. Primary data were obtained from Apple's digital narratives, social media platforms, and credible electronic mass media, and triangulated with academic literature and national policy documents. The findings reveal that Indonesia's fragmented HR development strategies, limited curriculum flexibility, and weak institutional coordination reduce its appeal in the global FDI landscape. The challenges indicate an urgent need for education system reform, workforce enhancement, and policy synchronization across sectors. The study contributes theoretically by combining digital ethnography with institutional analysis and provides practical implications for developing countries seeking to foster a sustainable, knowledge-based economy. In conclusion, aligning human capital development with global industry demands is essential to increasing FDI competitiveness.

Key words: human capital investment; foreign direct investment; apple; education policy; digital transformation

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INTRODUCTION

In the era of digital transformation and global economic integration, the quality of human capital constitutes a primary indicator of a nation's competitiveness in attracting foreign direct investment (FDI). The growth of FDI is not only correlated with economic expansion but also with a country's capacity to supply a skilled, adaptive, and industry-relevant workforce aligned with the demands of global technology-based sectors. Consequently, the development of a robust human capital ecosystem transcends the responsibility of the education sector and emerges as a cross-sectoral strategic imperative essential for long-term economic development.

Empirical studies have demonstrated that multinational corporations' investment decisions are strongly influenced by the availability of high-quality human resources in host countries. Sethi, Baby, and Sharma (2022), within the framework of the Zhang-Markusen model, asserted that education representing a form of human capital, exhibited an inverted U-shaped relationship with FDI inflows, indicating that only at an optimal level does human capital quality enhance foreign investment reception. In a similar vein, Yunus and Abdullah (2022), through a quantile analysis, found that technology absorption among multinational firms in Malaysia's manufacturing sector was highly contingent upon the absorptive capacity of workers, which was shaped by formal education and vocational training.

Nevertheless, Indonesia has yet to demonstrate optimal performance in attracting investment from global technology corporations such as Apple. Structural deficiencies, particularly the mismatch between graduates' competencies and the demands of the global digital industry, constitute a primary factor in investor reluctance. This structural misalignment was reinforced by the findings of Ibarra-Olivo et al. (2024), who examined the role of FDI in shaping the number of vocational education graduates in

Indonesia and Vietnam. Their study highlighted a decline in FDI involvement within production and headquarters segments sectors that should serve as pivotal drivers for technical skill enhancement.

The misalignment between the education system and industry demands is further reflected in the study by Miningou and Tapsoba (2020), which emphasized the importance of external efficiency in education systems specifically, the system's ability to convert average years of schooling into productive income. In the Indonesian context, such inefficiency indicates that despite rising education levels, the economic output generated from educational attainment has not sufficiently supported an investment-conducive environment.

Furthermore, Ngo (2021) found that the Human Development Index (HDI) comprising life expectancy, education, and income has a strong correlation with success in attracting FDI among developing countries. In this regard, holistic human capital development serves as a fundamental pillar for economic growth and investment appeal. This finding is further supported by Golo (2024), who argued that FDI exerts a positive effect on export diversification only when the level of human capital surpasses a certain minimum threshold.

Beyond the quantity and quality of education, institutional factors also influence investor perceptions regarding the readiness of a country's human capital ecosystem. Petrovic-Randelovic et al. (2020) revealed that political stability and control of corruption are more critical than human capital indicators in determining FDI location decisions in Balkan countries. Similarly, Khan, Rana, and Ghardallou (2023) emphasized that the relationship between FDI and carbon emissions in developing nations is significantly shaped by education levels. Their findings indicated that FDI inflows to countries with low educational attainment are more likely to be associated with environmentally harmful technologies.

In the context of sustainable development and industrial modernization, the quality of investment emerges as a central concern. Delevic (2024) emphasized that the distinction between the quantity and quality of human capital has a direct impact on the caliber of foreign investment received. Countries that fail to develop high-quality human capital tend to attract low-wage investment, which offers minimal long-term benefits for local economic development.

Even within the service sector often perceived as less dependent on manufacturing-based human capital James, Eria, and Ibrahim (2023) demonstrated that the Human Capital Index (HCI), along with FDI and national expenditure, significantly influenced service sector growth in Uganda. This evidence underscores the centrality of human capital across sectors in shaping investment outcomes.

Considering the body of evidence presented, it becomes evident that the development of an innovative, adaptive, and industry-oriented human capital ecosystem constitutes a strategic imperative for enhancing Indonesia's investment competitiveness. This study therefore aims to investigate how structural barriers within Indonesia's human capital ecosystem influence investment decisions by technology firms such as Apple, while proposing educational and policy-based approaches to reinforce collaboration among government institutions, the education sector, and the global industry. The research seeks to address a gap in the literature by offering an integrative framework grounded in human capital policy, responsive to global dynamics, and supportive of Indonesia's position in the emerging digital economy.

METHODS

This study employs a qualitative approach with a case study design to explore the dynamics of Indonesia's human capital ecosystem in relation to Apple's investment reluctance. The chosen methodology enables an in-depth, contextual, and holistic examination of the interconnections between educational policy, workforce readiness, and foreign direct investment (FDI) decisions made by global technology firms. The case centers on a specific phenomenon: the absence of Apple's investment in the form of manufacturing facilities or innovation hubs in Indonesia, despite the country's substantial consumer market. The primary focus lies in investigating how the quality and quantity of Indonesia's human capital influence the interest of high-technology companies in capital deployment.

Data for this study were collected from primary sources, including observations of official Apple social media content and statements from key company figures, as well as credible national and international electronic media coverage and the official website of Apple Inc. In addition, the analysis draws upon supporting literature such as theoretical books, peer-reviewed journal articles, and national regulations relevant to human capital development and foreign investment policy. A triangulation

strategy was applied to ensure the consistency and validity of findings by examining the alignment between primary data and scholarly sources.

The data analysis in this study integrates thematic analysis and data condensation techniques. Data condensation was conducted to reduce and filter key information from diverse digital content sources, allowing the focus to remain on core themes relevant to the research objectives. Subsequently, a thematic analysis was employed to identify emerging patterns, including competency gaps, investor perceptions of Indonesian labor quality, the integration of vocational education and industry, and the effectiveness of investment incentive policies. This process involved open coding, axial coding, and selective coding to categorize the data into interrelated conceptual themes. The analysis was conducted iteratively and contextually to capture the deeper meanings embedded within the data. Ethical considerations were strictly observed, particularly in the use of primary data obtained from social media and digital news sources. All content utilized was publicly accessible and did not violate the privacy of individuals or institutions. Individual identities were not disclosed unless they represented official institutional positions. Data was stored and managed using secure digital protocols to ensure the integrity of the information analyzed.

RESULTS AND DISCUSSION

This study identifies five key findings derived from a netnographic observation of Apple's official website, social media channels, and electronic mass media coverage. The analysis was conducted systematically through data condensation and thematic coding. The findings provide insights into the structural barriers within Indonesia's human capital ecosystem that influence investment decisions made by global technology firms.

Table 1. Sources and Data Findings from Netnographic Analysis

Thematic Category	Primary Data Source	Description of Findings
Competency Gap	Apple's LinkedIn and Tim Cook's Twitter; CNBC, Kompas, Detik.com articles	Narratives emphasized the inadequacy of Indonesian labor preparedness in high-tech sectors.
Weak Education–Industry Alignment	Apple's official website; investor interviews; TechCrunch and national media articles	Apple underscored the importance of integrating vocational education systems with global manufacturing needs.
Apple's Regional Human Capital Narratives	Apple Singapore website, Apple Newsroom, interviews with Tim Cook	Apple highlighted Vietnam and India as exemplary countries in supporting labor for expansion.
Absence of Apple Plans in Indonesia	Apple's official website (Indonesia excluded from global manufacturing map)	No mention of Indonesia in Apple's manufacturing expansion plans, despite its large user base.
Unacknowledged Investment Policies	BKPM, media coverage, industrial associations' statements	Incentive policies remained unacknowledged by Apple, likely due to inadequacies in the local human capital ecosystem.

Table 1 reveals a notable competency gap between Indonesian graduates and the requirements of the global technology industry. This is supported by digital content from Apple's leadership, which tends to highlight admiration for educational and training systems in countries such as India and Vietnam. The weak linkage between education and industry further substantiates the notion that Indonesia's human capital development is not yet integrated into global value chains.

Table 2. Distribution of Data Sources by Media Type

Media Type	Number of Documents/Posts Analyzed	(%)
Social Media	45	40.9
Electronic Mass Media	30	27.3
Apple Official Website	15	13.6
Academic Literature	12	10.9
National Regulations	8	7.3
Total	**110**	**100**

The distribution of data sources indicates that the majority of relevant insights were drawn from social media and electronic mass media. This highlights the influential role of open digital communication in shaping public and institutional perceptions of Indonesia's human capital readiness. In the context of netnographic methodology, social media narratives provide an essential lens for understanding how national reputations are formed within the landscape of global investment decisions.

Table 3. Thematic Coding Results from Digital Data

Open Coding	Axial Coding	Selective Coding
Workforce misalignment with industry	Competency Gap	Underdeveloped Human Capital Ecosystem
Weak education–industry integration	Lack of Link and Match	Systemic Disconnection in Education
Apple praises India and Vietnam	Positive Regional Narrative	Regional Human Capital Benchmarking
No Apple factory in Indonesia	Absence of Expansion Strategy	Market Rejection as Production Base
Ineffective investment policies	Investment Policy Inefficiency	Policy–Investment Disconnect

The thematic coding results reveal consistent narrative patterns across digital sources. The underdeveloped human capital ecosystem, combined with fragmented educational and investment policies, emerges as the primary reason for Apple's reluctance to establish a production or innovation base in Indonesia. The ineffectiveness of existing incentive policies further reinforces negative investor perceptions regarding Indonesia's investment climate.

Overall, the findings suggest that Indonesia's global human capital reputation is shaped not solely by national statistics but also by digital narratives and institutional responses to multinational corporate needs. These insights serve as a critical foundation for reforming human capital policies and constructing a more adaptive and participatory investment ecosystem.

The results of this study reinforce previous findings that emphasize the critical role of human capital ecosystems in attracting foreign direct investment (FDI), particularly in high-technology sectors. Zhang et al. (2024) demonstrated that human capital quality serves as a decisive factor in location choices for innovative-driven multinational firms. This is consistent with Indonesia's situation, where a mismatch between labor competencies and global digital industry needs presents a significant barrier. Sethi et al. (2022) also indicated that FDI flows are highly sensitive to the quality of education and technical training, especially in the technology manufacturing sector. Apple's absence from Indonesia's investment map appears driven less by market size considerations and more by unmet institutional standards related to innovation productivity and efficiency.

The findings on the ineffectiveness of incentive policies are also supported by Tu et al. (2023), who argued that regulation alone is insufficient to attract high-value investment without a complementary education system and institutional governance that promote continuous learning. Allouzi and Alomari (2023) emphasized that human capital development must be recognized as a strategic component of

economic diplomacy. In the Indonesian context, sectoral policies related to human capital remain fragmented and have yet to generate the synergistic effects necessary to establish systemic attractiveness for technology investors. Hanushek and Woessmann (2008) further noted that learning outcomes, rather than enrollment rates, are critical for shaping national productivity structures. Therefore, transforming Indonesia's human capital ecosystem requires a cross-sectoral, multi-stakeholder approach that positions industry as a strategic partner in vocational education and training design.

Stefoni et al. (2024) emphasized the importance of a supportive policy and educational governance ecosystem in facilitating the transition from educated unemployment to high-quality employment. In the Indonesian context, the prevalence of graduates who remain unabsorbed by the labor market reflects a systemic failure to align skill supply with industry demand. Egbengwu et al. (2025) added that countries that have successfully attracted FDI in the technology sector typically possess national platforms that integrate labor market data, educational planning, and industrial needs. To date, Indonesia lacks a predictive national system capable of aligning educational outputs with the developmental trajectory of priority sectors. This shortcoming is further exacerbated by the absence of a cross-ministerial digital human capital roadmap that could serve as a guiding framework for government and industry stakeholders.

Kim et al. (2024) highlighted that foreign investors seek more than fiscal incentives; they are also drawn to social stability, inclusive policy frameworks, and sustainability guarantees. Consequently, the development of human capital that is grounded in equity and long-term sustainability becomes a critical investment magnet. This perspective is reinforced by Gandhi et al. (2021), who linked global technology investment to the availability of a workforce that not only possesses strong technical competencies but also demonstrates ethical, digital, and collaborative literacy. In this regard, human capital investment must move beyond employability skills to encompass character development and intercultural competencies, which offer distinct advantages in the globalized landscape of Industry 5.0.

Nelson et al. (2024) asserted that an effective human capital ecosystem must be built upon three interdependent pillars: adaptive education, transformative regulation, and cross-sector partnerships. These pillars serve as preconditions for a country's transition from a low-wage economy to an innovative-driven one. In Indonesia's case, these components remain fragmented and operate in isolation. Patel et al. (2023) recommended the establishment of innovation centers directly linked to educational institutions as platforms for industry-responsive human capital development. Similarly, Al Amin and Baldacci (2024) stressed that the long-term stability of foreign investment depends heavily on ecosystems that foster progressive local workforce development through affirmative policies and national training system reforms. Within this framework, Indonesia must reposition its human capital strategy from a quantitative approach to a dynamic, competency-based model tailored to the future needs of the digital industry.

Wang et al. (2024) emphasized the significance of curriculum flexibility and cross-sectoral connectivity in building an effective innovation ecosystem. Their study underscored the need for educational institutions to create experimental spaces for curricula that are responsive not only to labor market demands but also to the dynamics of disruptive technologies. In line with this perspective, Chen and Zhou (n.d.) demonstrated that educational policy reforms must focus on cultivating transformative capabilities such as adaptability, systems thinking, and digital leadership. Indonesia remains entrenched in a labor supply logic aimed at low-cost competitiveness, which is misaligned with the long-term vision for advanced human capital development. Consequently, aligning educational orientation, human capital regulation, and national investment strategies is an urgent and strategic priority.

Ștefănescu et al. (2024) argued that human capital quality should be assessed through cross-sectoral competency indicators involving innovation metrics, industry engagement, and technological productivity. Countries that rely solely on formal education participation rates—without curriculum reform or industry integration—often fail to attract long-term FDI. Similarly, Triana et al. (2024) clarified that the integration of technology into education should not be viewed merely as an instrumental reform, but rather as a transformational strategy for enhancing national economic capacity. While Indonesia holds the potential to accelerate this transformation, such efforts require policy consistency across ministries and regulatory continuity within a long-term human capital investment framework.

Golo (2024) noted that the positive impact of FDI on export growth and economic restructuring can only be realized when human capital reaches a minimum quality threshold. This finding is reinforced by Ibarra-Olivo et al. (2024), who found that increased FDI inflows do not automatically enhance

vocational education capacity without strong institutional partnerships between the public and private sectors. Miningou and Tapsoba (2020) also cautioned against using average years of schooling as a sole indicator of readiness for high-tech investment, advocating instead for a shift in policy orientation from access-based education to learning outcomes and workforce readiness. As such, transitioning from quantity-driven to a competency-based human capital development paradigm is essential for aligning education strategies with FDI interest in high-value sectors.

Ngo (2021) confirmed that the Human Development Index (HDI), comprising health, education, and income dimensions, is positively and significantly correlated with FDI inflows in developing countries. In this context, the quality of human capital serves as a reflection of integrated national development structures. Supporting this view, James, Eria, and Ibrahim (2023) showed that the Human Capital Index (HCI) contributes directly to the growth of both the service and manufacturing sectors, especially when reinforced by national expenditure and economic openness. Thus, human capital development must be positioned as a foundational pillar of Indonesia's economic strategy, not only to sustain internal growth but also to enhance the country's competitive standing in the global race for high-tech investment.

Intisar et al. (2020) found that trade openness and human capital accumulation had a significant positive impact on economic growth in Asian countries, particularly when tertiary education quality supported industrial skills development. In this regard, tertiary education quality has been shown to play a key role in attracting high-value FDI, as evidenced by Pantelopoulos (2023), who identified a strong correlation between advanced education and foreign investment flows across Europe. Similar findings were reported by Le et al. (2021) and Do et al. (2023), who noted that FDI influences wage and income inequality in developing countries such as Vietnam, highlighting the role of skill distribution in investment sustainability. In Malaysia, Abidin et al. (2022) found that foreign investment in the manufacturing sector affects wage structures depending on the educational qualifications of the local workforce. Pantelopoulos (2023) further distinguished the role of education in shaping FDI as opposed to foreign portfolio investment (FPI), asserting that long-term investment decisions are more heavily influenced by human capital quality. Nthangu and Msweli (2024) added that high-quality education is a key variable in econometric models explaining FDI attractiveness in Sub-Saharan Africa. These findings collectively suggest that improving the quality of higher education directly enhances national competitiveness within the global investment ecosystem, particularly in technology- and skill-intensive sectors.

Absorptive capacity constitutes a critical element in mediating the impact of foreign direct investment (FDI) on human capital development and national productivity. Nguyen et al. (2020) found that FDI inflows to ASEAN countries had a positive effect on human capital enhancement only when institutional readiness and the technological absorptive capacity of the local workforce were in place. In this framework, Dankyi et al. (2022) revealed that income levels and economic structures moderate the relationship between FDI and growth via human capital channels. At the industry level, Roy and Paul (2022) explained that firms' absorptive capacity in India's manufacturing sector significantly influenced knowledge and innovation spillovers. These findings align with Yunus and Abdullah (2022), who demonstrated that variation in absorptive capacity among Malaysian manufacturing firms accounted for disparities in the benefits derived from FDI. Further, Silveira et al. (2022) developed a comparative model between developed and developing countries, indicating that state structure and institutional systems shape the effectiveness of absorptive capacity. Using a quantitative approach, Yunus (2023) identified technological capacity and market openness as key enabling variables in modeling the relationship between FDI and performance in knowledge-based industries. Therefore, policy reforms in Indonesia must simultaneously promote technological investment and enhance workforce absorptive capacity, particularly in medium- and high-tech manufacturing sectors.

The transition toward a green economy positions human capital development as a strategic foundation for attracting sustainability-oriented FDI. Lin et al. (2021) showed that the accumulation of innovative human capital contributed directly to green economic growth and reductions in CO_2 emissions in China. Xiao and You (2021) reinforced this by highlighting that the impact of human capital on green total productivity depended on regional differences and institutional roles. In developing countries, Khan and Anwar (2022) and Khan et al. (2023) found that natural disaster resilience and sustainable energy security correlated positively with human capital integration in renewable energy policy frameworks. Tao et al. (2022) added that environmental regulation and higher education together promoted green economic growth efficiency in China. In contrast, Boubacar et al. (2024) found that FDI

in Africa led to increased CO_2 emissions when human capital governance failed to ensure sustainable industrial practices. Tang et al. (2021) also emphasized that institutional quality and education serve as key determinants in strengthening environmental outcomes at the global level. Within a just and sustainable development agenda, Shirazi and Hajli (2021) warned of global digital divides exacerbated by disparities in human capital innovation, while Pantelopoulos (2024) argued that gender equity in education and workforce development plays a critical role in attracting environmentally responsible FDI among OECD countries. Thus, synergy between green policy, transformative education systems, and social inclusion becomes a prerequisite for building a competitive human capital ecosystem within a sustainable investment framework.

Institutional quality and socio-economic inequality are structural determinants that affect the effectiveness of FDI in advancing human capital. Petrovic-Randelovic et al. (2020) demonstrated that low human capital quality in the Balkan region weakened the impact of FDI on economic growth, particularly where institutional systems failed to support innovation and labor mobility. Gnangnon (2022) highlighted that high poverty rates in developing countries constrained FDI inflows by lowering productivity and increasing social risks. Supporting this, Iritié and Tiémélé (2023) found that in Côte d'Ivoire, policy coherence between education and fiscal frameworks was essential for achieving long-term FDI-driven growth. From a social welfare perspective, Forte and Abreu (2023) observed that FDI contributed positively to societal well-being only when investment returns were redistributed through education and public services. Kousar et al. (2023) further emphasized the importance of government expenditure on education and health as drivers of human capital development. Li et al. (2023) cautioned that poor human capital quality may attract exploitative foreign investment, as observed in regions with high dropout rates. Additionally, Simionescu et al. (2021) showed that national competitiveness in the European Union is shaped not only by technology and infrastructure but also by the configuration of human capital and the quality of institutional governance. Therefore, improving institutional quality and implementing redistributive reforms are essential to ensuring that FDI inflows genuinely support inclusive and equitable human capital advancement.

Regional and local-level human capital development plays a critical role in ensuring that the benefits of foreign direct investment (FDI) are equitably distributed. Ramdhan (2021) found that total factor productivity (TFP) growth in Indonesia's manufacturing sector was significantly influenced by the quality of provincial-level human capital, with FDI acting as the primary transmission channel. Similarly, Moussir and Chatri (2020) observed that structural transformation and productivity growth in Morocco were shaped by the ability of local regions to absorb technologies brought in by FDI. In China, Li and Wu (2024) demonstrated that the interaction between human capital and information and communication technology (ICT) contributed to productivity gains in major urban areas, highlighting that digital convergence must be supported by strengthened local human capital capacity. Liu (2024) further showed that FDI had a positive effect on human capital accumulation only in areas with adequate access to higher education. Adibi and Lee (2022) emphasized the importance of integrating national innovation systems with the investment climate to improve firm-level productivity in developing countries. Sethi et al. (2022) also found that cross-country variations in the FDI–human capital relationship were largely explained by the effectiveness of local education and training institutions. In support of this, Shi and Qamruzzaman (2022) demonstrated that inclusive education played a crucial role in poverty reduction via financial inclusion channels. Amoako et al. (2024) argued that the sustainability of non-renewable energy strategies in developing economies is enhanced when linked to regionally grounded human capital policies. Therefore, anchoring human capital ecosystems in local strengths is essential to ensure that foreign investment contributes to inclusive and sustainable regional growth.

Institutional reform and future-oriented human capital strategies are strategic imperatives for aligning domestic priorities with global investment demands. Sahoo and Sethi (2020) found that remittance inflows acted as catalysts for human development in Sub-Saharan Africa, but their impact was contingent on effective institutional systems. Extending this perspective to South Asia, Sahoo et al. (2020) noted that improvements in the Human Development Index (HDI) depended not only on remittance volumes but also on the direction of education and health policies. In emerging tourism sectors, Hassan (2022) emphasized the need for synergy between investment and human capital development to sustainably optimize local economic potential. In South Africa and the Southern African Customs Union (SACU), Henok and Kaulihowa (2022) found that FDI directed toward labor-intensive

sectors had a greater impact on local capacity development when accompanied by structured training programs. Mehta et al. (2023) highlighted that the success of India's manufacturing sector was driven by the alignment between FDI and national vocational curriculum reforms. Within this framework, Delevic (2024) argued that FDI quality not merely its volume should serve as the benchmark for evaluating investment policy outcomes. Thus, institutional reforms in education, workforce training, and human capital quality assurance are essential. Ngo (2021) concluded that sustainable endogenous economic growth depends on human capital accumulation guided by a long-term institutional vision and an inclusive national strategy.

Despite macro-level strategies, numerous operational and organizational barriers continue to hinder the synchronization of human capital development policies with the needs of foreign investors. Marasigan (2020) found that flexible work arrangements, such as work-from-home schemes, remain largely unincorporated in human capital training designs, particularly in technology-intensive service sectors. Meanwhile, Briones et al. (2021) observed that employer preferences for graduate skills are heavily influenced by soft skills and adaptability, rather than formal qualifications alone. Budsayaplakorn and Sompornserm (2021) further revealed that ASEAN's economic integration remains constrained by the absence of adaptive, cross-national training platforms. In Sub-Saharan Africa, Meniago and Lartey (2021) concluded that FDI positively affects productivity only when accompanied by bottom-up human capital policy reforms. Adewumi (2024) added a sustainability dimension, emphasizing challenges in implementing green human resource management (GHRM), including limited managerial awareness and weak regulatory incentives. At the foundational level, Feldmann (2024) found that while FDI can boost school enrollment in developing countries, its impact remains uneven without strengthened school management systems and community engagement.

Tarek and Albaqami (2024) linked national absorptive capacity for technology with local entrepreneurship levels, highlighting the need for entrepreneurship training in national human capital strategies. In the agricultural and food sectors, Deme and Doli (2025) found that FDI supported agricultural innovation in WAEMU countries only when local workers possessed basic technical skills. Natividad et al. (2025) showed that human resource management (HRM) practices, workplace culture, and training systems directly influenced employee performance, particularly in public sector organizations. Mohamad and Yunus (2024) emphasized the importance of strengthening worker absorptive capacity through systematic training to ensure effective knowledge spillovers from FDI. Finally, Zhan et al. (2022) connected education and internet access with improvements in quality of life, reinforcing the long-term attractiveness of a country as an investment destination.

CONCLUSION

The study showed that the human capital ecosystem plays a pivotal role in shaping foreign direct investment (FDI) decisions, particularly from global technology firms such as Apple. Through netnographic analysis and digital content examination, the research identified key barriers to high-value investment in Indonesia, including competency gaps, weak integration between education and industry, and the ineffectiveness of incentive policies. A review of 63 scholarly sources revealed that FDI success is not solely determined by fiscal regulations but is more profoundly influenced by the quality of educational institutions, workforce absorptive capacity, curriculum flexibility, and readiness to adapt to digital transformation and the green economy. Fragmented human capital development absent a cohesive, cross-sectoral national strategy has been shown to diminish Indonesia’s global investment competitiveness. Therefore, reforming educational institutions, strengthening inter-actor connectivity (among the state, industry, and communities), and leveraging technology to enhance training quality and social participation are strategic imperatives for building an inclusive and innovative human capital ecosystem. This conclusion not only reinforces the academic framework linking human capital and FDI but also offers policy guidance for developing countries seeking to chart a pathway toward knowledge-based and sustainable economic development.

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