

## The Role of Human Capital in Education, Environment, and Economic

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### ABSTRACT

Our objective was to validate a prior study's hypothesis about the link between human capital and various factors. We gather scientific papers from natural science, emerald, and google researchers, as well as books published by specialists in the disciplines of human capital, economics, and the environment, via a systematic examination of the literature. We do research beginning with a conceptualization of human capital and education. Following that, we investigate the relationship between the research system on education, economy, and the environment and the notion of human capital. We found that learning new things, acquiring experience, and using cutting-edge technology are all ways to boost human capital. Human capital is essential to economic growth in developing nations. It is detrimental to the economic growth of developing countries to improve their institutions and people. Pollution and the health consequences on children may alter the dynamics of family inequality. Assuming parental health care spending is ineffective, we propose an alternative policy mix that pays for additional medical expenses.

**Keywords:** Human Capital, Education, Environment, Economic, People.

## **INTRODUCTION**

Education is a means of enhancing human capital by acquiring new information and knowledge, absorbing experience, and applying new technologies. The relationship between human capital depreciation and educational attainment emphasizes potential distinctions between general and special education. A human capital loss is greatly reliant on the sort of education gained. Academic education shields workers from depreciation more successfully than vocational education focused on particular skills, and hence life-cycle earnings studies would benefit from a longer protracted individual observation period (Weber, 2014). Entrepreneurship is influenced by human capital theory factors, including education, training, and prior job experience. As a result, strong policies are needed to support the long-term education and training of women entrepreneurs, particularly those with low levels of education (Adom & Yeboa, 2016).

Students' perceived human capital and entrepreneurial intentions are being studied in the light on conflicting results in existing research on the usefulness of entrepreneurship education and training, as well as on the effects of entrepreneurial activities on students. In light of the substantial governmental support and budgetary resources devoted to entrepreneurship education across the world, a better understanding of the programs' effectiveness is considered essential. It indicated that entrepreneurship training and education successfully produce key entrepreneurial interest results at the student level. Furthermore, this research showed that human capital strongly influences the link. Based on these results, it is proposed to concentrate more on entrepreneurship education programs offered in universities and therefore boost entrepreneurial results among students (Aboobaker & D, 2020).

According to Shimada (2014), Children's unpaid work shifts as a result of parental relocation owing to poverty, which impacts their education and human capital creation. It was also shown that encouraging parents to move to high-wage nations and lowering the child's household duty did not necessarily improve the number of children attending school. Additionally, the potential pitfalls of underdevelopment in dynamic contexts have been identified (Sadr, 2015). Research on the relationship between human capital and enterprise emergence shows that multiple presumptive causes, namely the combination of human capital's indicator variables, are the best way to conceptualize and measure it (Dimov, 2016). When it comes to exports, generic and company-specific human capital influences the trajectory and intensity of exports differently. Export trend and intensity are both influenced by a company's accessible human capital (education of business personnel). However, employee experience at work only affects export trends and intensity, not employee training. Human capital is a far more powerful force than specialized human capital in influencing export behavior (Lopez-Rodríguez & Orellana, 2019).

A lack of finances and technology-mediated human capital investment may affect entrepreneurial tendencies that examine the link between formal online learning possibilities (Lentini & Gimenez, 2019). Entrepreneurial objectives may be achieved by concentrating on the human capital investments individuals make via education and employment. Online learning and the gig economy have both been demonstrated to significantly increase the chances of prospective entrepreneurs succeeding in their undertakings, as a consequence. Many studies on resilience and processes have identified a crucial role for technology in this connection, as

well as how gig work promotes entrepreneurial goals via informal training and career preparation (Jabbari, Roll, Bufe, & Chun, 2021). Advances in agricultural technology have reduced human labor of farm tasks. A continuing loss in human resources means less human work, a critical component of manufacturing, which is a reason for concern if it continues (Sulisnaningrum, 2021). When it comes to human capital in today's new growth literature, it may be a little optimistic to the beneficial effect on a country's economic development. Based on this logic, it is determined that what matters for more significant growth is not the amount of human capital that exists, but rather how much of it is being put to use on a daily basis. Apart from human capital, openness to commerce and investment also contribute to development. On the other side, inflation has a negligible effect on growth, while the employment rate negatively impacts. Additionally, the research demonstrates that for emerging nations, the stock of human resources negatively influences economic development while the average working hours have a beneficial effect. Finally, it seems as if domestic investment and employment levels are the primary drivers of growth in emerging nations (Tahir, Hayat, Rashid, Afridi, & Bin, 2020).

The direction of the positive effect relationship varies as one variable changes and responds to the other, indicating that investments in health and education reinforce one another. This is in line with the human capital theory, which asserts that an employee's personal attributes have a positive impact on his or her ability to accomplish their professional duties (Widarni & Bawono, 2021). Research shows that human capital development in selected South Asian countries is influenced by a wide range of factors, including market size, growth rate, and financial indicators. Higher levels of human capital accumulation may be seen in countries with larger markets and faster economic development (Sethi, Mishra, & Bhujabal, 2019).

## **LITERATURE REVIEW**

Findings from research on the FDI-growth nexus and a human capital threshold showed that neither FDI nor human capital had any significant effect on economic development in sub-Saharan Africa (SSA). However, the economic growth effect of FDI turns positive and considerable when the interaction variables FDI and human capital are added in the model, even if the coefficients of the interactive terms remain negative and significant. According to this theory, the SSA lacks a sufficient, high-quality workforce that can absorb and use FDI's economic development spillover (Anetor, 2020).

Factor accumulation and GDP per worker have a long-term correlation, which supports the growth model by assessing the inventory of human and natural physical assets, respectively. Endogenous showing that the development of human capital increases labor productivity, employment levels, and per capita income, resulting in economic growth (Munir & Arshad, 2019). Finance and human capital have a huge influence on growth in emerging nations, and this is shown by the interplay between these two important factors and how it affects economic progress. Human resources also contribute to economic growth in developing countries. Finance and human capital development positively affect economic growth in developing countries (Sarwar, Khan, Sarwar, & Khan, 2020). As consequence, economic growth benefits significantly from human and institutional development. Economic progress in underdeveloped nations is significantly hampered by weak institutions and a lack of human capital. If weak and dysfunctional institutions exist, increased investment in human development will

harm economic growth since other stocks will be more likely to be utilized for rent-seeking and social activities that are not productive (Uddin, Ali, & Masih, 2020).

Institutional elements such as government performance and financial freedom operate as mediating factors between human capital, economic freedom, government performance, and economic development. The empirical evidence indicates that economic growth and human capital are inversely U-shaped, not linear. Additionally, human capital owns a beneficial influence on economic development only for a limited period, and governance performance in the BRICS favorably modifies the effect of economic growth on human capital (Duan et al., 2021). Runtunuwu (2020) states that economic growth in a country could increase investor interest in investing in FDI. It has been established experimentally that foreign capital inflows, Human Capital Development (HCD), and economic growth have a significant impact on the growth of the economy. However, in sub-regional economies, Foreign Direct Investment (FDI), Official Development Aid (ODA), Human Capital Development (HCD), and gross domestic investment all have a favorable relationship with economic growth. On the other side, economic development is inversely associated with the migration of official remittances, portfolio investment, and foreign debt (Musibau, Yusuf, & Gold, 2019).

The dynamics of family inequality may be influenced by early exposure to pollution and its health repercussions. It is possible for the economy to become unequal over time, especially if pollution and parental health investments have a role in determining children's health on an endogenous basis. Examine whether charging polluting production to raise money for pollution reductions can address this problem. If the emission intensity isn't high and the discrepancy isn't great, we show that doing so may diminish inequality over time and allow us to escape the trap. Alternatively, we show that if parental investment in child health is sufficiently efficient, a policy mix containing increased health expenditure subsidies may be preferable (Constant & Davin, 2021; Fisher, Bellinger, & Crop, 2021).

A human capital spillover effect of labor mobility on public education investment Based on the endogenous growth theory, a regional human capital spillover model was developed in China to examine the implications of human capital spillover on China's labor mobility and public education investment choices. Due to superior social and economic conditions and a lack of incentives for public schooling in the poorer regions, regional labor mobility has resulted in developed regions benefitting from less developed regions. Pursue distinct development tracks, with an increasing divergence in financial investment and education growth (Zhang, Wu, Zhang, & Wang, 2009).

Education is a means of enhancing human capital via the acquisition of new information and knowledge and through the absorption of experience and the application of new technology (Puspaningtyas & Harnani, 2021). Education attainment as a function of human capital depreciation, with specific attention to probable disparities between general and special education. A person's human capital depreciation is influenced greatly by the kind of education they obtained.

## **RESEARCH METHOD**

Our objective was to validate a prior study's hypothesis about the link between human capital and various factors. We gather scientific papers from natural science, emerald, and google researchers, as well as books published by

specialists in the disciplines of human capital, economics, and the environment, via a systematic examination of the literature. We gather scientific publications in an organized manner, from selection to analysis, using a systematic literature research approach. We employed content analysis to analyze our research journal. Our study is qualitative, and as a consequence, the product of our research is a hypothesis based on the findings of past studies.

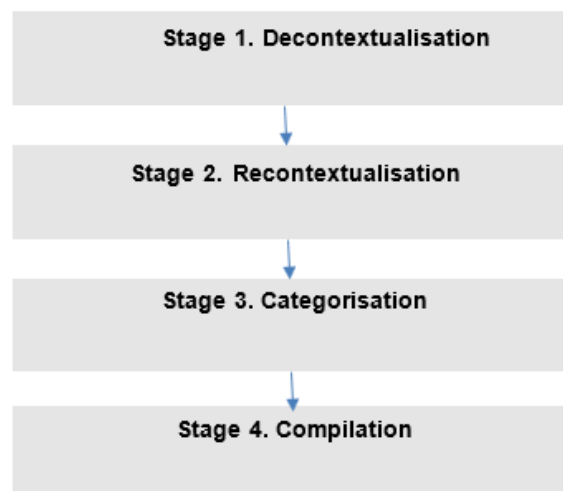
We do research beginning with a conceptualization of human capital and education. Following that, we investigate the relationship between the research system on education, economy, and the environment and the notion of human capital. We highlighted four important topics from our preliminary research to better comprehend its relevance to human capital theory, namely:

1. Education
2. Human Capital
3. Economic
4. The environment

Each subject is developable based on the outcomes of our assessment of thousands of research publications discovered via emerald, Google Scholar, and scientific directory searches.

The theme analysis that we conducted was an attempt to analyze the relationship between the variables we identified and potential future changes to form a conceptual picture of the relationship between human capital theory, education, economics, and the environment. We did this by analyzing the themes and the connections between topics to form a conceptual picture of the relationship between human capital theory, education, economics, and the environment. We adopt the analysis system from (Bengtsson, 2016) with the following steps :

**Figure 1. Content Analysis Stage Diagram**



Here we use the following content analysis stages:

Stage 1: Decontextualization (identifying the underlying idea or concept).

Stage 2: Recontextualization (the gap between “content” and “junk” must be reduced).

Stage 3: Categorization (identification of groupings of people with similar characteristics detected by investigators through various methods).

Stage 4: Preparation (compilation of interesting findings that make sense).

Table 1 and Figure 2 provide interpretations of the report based on the audit investigations conducted by our committee members and associates.

## RESULTS

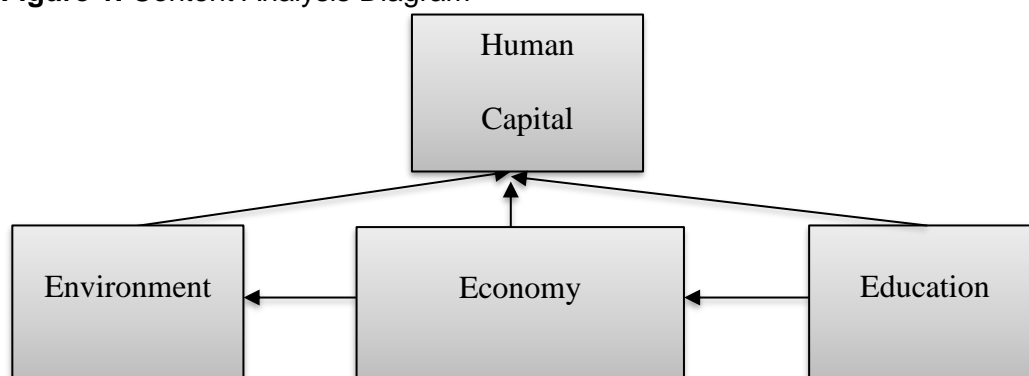
The approach establishes a link between many areas, including education, human capital, the economy, and the environment. The result of content analysis based on our theme is presented in table 1.

**Table 1.** Content Analysis

Theme	Content Analysis
Education	Only six of the articles we searched on education and human capital came close to being researched. The six articles demonstrate that education is an essential component and indication of increased human capital.
Human Capital	Only ten of the papers we looked for on human capital came close to the research. Human capital is at the core of economic, educational, and environmental determinants, as shown in the ten articles.
Economic	Only five of the publications we searched on economics and human capital were relevant to our inquiry. The five papers demonstrate the critical importance of human capital in human capital theory.
Environment	Only three of the articles we searched on pollution came close to being researchable. The three papers demonstrate that human capital is intimately related to the objective of environmental improvement.

There are four primary themes that we identified in our research, and we found the findings by conducting different triangulation and improving the results. Then, we provide them in the table. We attempt to link the flow of connections between themes, and we express it in the diagram in Figure 1.

**Figure 1.** Content Analysis Diagram



In studies of lifetime wages, a longer term of individual observation would be beneficial since academic training protects employees against depreciation more than skill-specific training (Weber, 2014). Women's education, training, and past job experience all impact entrepreneurship; consequently, policies that encourage

training and education for women entrepreneurs are needed (Adom & Yeboa, 2016).

Students' perceived human capital and entrepreneurial goals will be examined in this research in light of the inconsistent results in the current literature on the efficacy of entrepreneurship education and training. With so much money going into entrepreneurship programs throughout the world, it's imperative that we have a better grasp of their efficacy. Afterward, to see whether human capital influences the link between entrepreneurial training and the desire to start a company. Entrepreneurship training and education have been shown to improve the entrepreneurial enthusiasm of pupils. Human capital was also shown to be a key mediating factor in this connection, according to the findings of this research. Students who participate in university-based entrepreneurship training programs are more likely to achieve entrepreneurial achievements (Aboobaker & D, 2020).

Children's education and human capital formation are harmed when parents move because of poverty (Shimada, 2014). It was also found that encouraging parents to move to high-wage countries and reducing the responsibility of children in the home did not necessarily result in an increase in the number of children attending school. Additionally, the potential hazards of underdevelopment in dynamic environments have been identified (Sadr, 2015). By conceptualizing and quantifying human capital in entrepreneurship research, Human capital and venture emergence are best defined as a collection of presumptive causes, i.e., human capital is relevant when specific combinations of its indicators are present in the data (Dimov, 2016).

Export growth and intensity are not influenced in the same way by both general and enterprise human capital, as can be shown from the data. Even though human capital (work experience) has an impact on both exporting proclivity and intensity, only certain parts of human capital (employee education) have an impact on export trend and intensity but not on training. Individual human capital has less influence on export behavior than the entire human capital of a corporation (Lopez-Rodriguez & Orellana, 2019).

Lack of resources and tech human capital investment may have an influence on the aspirations of individual entrepreneurs. Formal online education and the gig economy both have a role in fostering entrepreneurial aspirations, according to the authors (Lentini & Gimenez, 2019). As a result, both online education and labor in the gig economy are connected with increasing prospects for entrepreneurial intents. Additionally, it has been discovered via numerous analyses of resilience and processes that technology mediation plays a significant role in this connection, and entrepreneurial aims may be achieved via the use of gig labor in the form of informal skill personal growth and career preparation (Jabbari, Roll, Bufe, & Chun, 2021).

Human labor is made simpler by technology, and developments in agricultural technology result in agricultural work needing less personnel. However, if the reduction continues, it is the reason for concern since it signifies a fall in human labor, which is the primary element of production (Sulisnaningrum, 2021).

The new growth literature is often rather optimistic about human capital's beneficial effect on a country's economic development. On the basis of this logic, The amount of human capital isn't what counts for growth, but rather how many hours workers

put in each week. Apart from human capital, openness to commerce and investment also contribute to development. On the other side, inflation has a negligible effect on growth, while the rate of employment has a negative effect. Additionally, the research demonstrates that for emerging nations, the stock of human resources has a negative influence on economic development while the average working hours have a beneficial effect. Finally, it seems as if domestic investment and employment levels are the primary drivers of development in emerging nations (Tahir, Hayat, Rashid, Afridi, & Bin, 2020). Investing in both health and education has a compounding effect, as seen by the shift in the direction of the positive effect relationship when one variable changes. This is in line with the human capital theory, which asserts that an employee's personal attributes have a positive impact on his or her ability to accomplish their professional duties (Widarni & Bawono, 2021).

There is a strong correlation between market size and growth rate and human capital development in selected South Asian nations after completing an empirical study on the link between market size and financial development. In countries with larger markets and faster financial development, it is obvious that the accumulation of human capital is higher (Sethi, Mishra, & Bhujabal, 2019). Research in sub-Saharan Africa (SSA) has shown that both foreign direct investment (FDI) and human capital have no significant impact on economic development in the region. Foreign direct investment and human capital are interdependent variables that have a considerable impact on economic development, even if their coefficients are both negative. This assumption is accurate if SSA does not have a sufficient and high-quality workforce capable of using spillovers from FDI for economic development (Anetor, 2020).

Human capital and real tangible capital are related in a long-term perspective to GDP per worker, which is compatible with the growth model as human capital improves, productivity, employment, and per-capita income rise as a consequence (Munir & Arshad, 2019). According to the viewpoint of developing nations, the development of finance and human capital, as well as the interactions between these two factors, have a substantial influence on economic progress. Human resources can contribute to economic progress in underdeveloped nations, and finance and human capital development positively affect economic growth in emerging nations (Sarwar, Khan, Sarwar, & Khan, 2020; Alim, Setiyantono, & Zakiah, 2021). Human and institutional development have a substantial impact on economic progress. Human and institutional development, it turns out, has a considerable detrimental impact on emerging nations' economic performance. Economic growth will be negatively impacted if more money is invested on human development, according to this research, and dysfunctional institutions since additional stocks are more likely to be exploited for rent-seeking and unproductive social activities (Uddin, Ali, & Masih, 2020).

In the link between human capital, economic freedom, government performance, and economic development, and if institutional elements such as government performance and financial freedom operate as a mediating factor, the empirical evidence indicates that the link between human capital and economic development is inversely U-shaped, not linear. Additionally, human capital has a beneficial influence on economic development only for a limited period, and governance performance in the BRICS favorably modifies the effect of human capital on economic growth (Duan, et al., 2021).



HCD has been found to have a significant impact on economic growth when the relationship between foreign capital inflows and human capital development is explored experimentally. However, in sub-regional economies, foreign direct investment (FDI), official development aid (ODA), human capital development (HCD), and gross domestic investment all have a favorable relationship with economic growth. On the other side, economic development is inversely associated with the migration of official remittances, portfolio investment, and foreign debt (Musibau, Yusuf, & Gold, 2019).

Inequality in the family may be influenced by early exposure to pollution and its health repercussions. When pollution and parental health investments have an endogenous effect on children's health, we show how economic inequalities and an inequality trap with increasing inequality may occur over time. We analyze whether environmental measures, such as taxing polluting industry in order to assist pollution reductions, can address this quandary. If the emission intensity is not high and the disparity is not great, we demonstrate that doing so may reduce inequality over time and make it possible to escape the trap. According to our findings in this paper, it may be preferable to include enhanced subsidies for health expenditures in the overall health policy mix, if familial investment in child health is sufficient (Constant & Davin, 2021; Fisher, Bellinger, & Crop, 2021).

Labor mobility and its influence of education investment on human capital spillovers Endogenous growth theory has been utilized to build a model that examines the impact of human capital spillover on China's limited labour migration and impact on public education expenditure decisions. The improved social and economic conditions in developed areas have led to the transfer of resources from underdeveloped regions to developed areas, which in turn has resulted in a reduction in public investment in education in low-income areas. Pursue distinct development tracks, with an increasing divergence in financial investment and education growth (Zhang, Wu, Zhang, & Wang, 2009).

## **DISCUSSION**

Human capital may be increased via education through learning new things, gaining experience, and using new technology. It's important to note the link between educational achievement and human capital depreciation since it highlights the possible variations between regular and special schooling. A person's human capital depreciation is heavily influenced by the sort of education they obtain. More extended individual observation periods would help study life-cycle wages since academic training shields employees against depreciation more than vocational training that concentrates on specialized skills.

Entrepreneurship is influenced by education, training, and past job experience, which are all based on the human capital hypothesis. An effective strategy is thus required to foster education and training of women entrepreneurs in a sustainable way, particularly those with low educational attainment. Entrepreneurship education and training are ineffective in several studies, including those examining how entrepreneurship affects human capital and students' perceived entrepreneurial goals. A better understanding of the effectiveness of entrepreneurship education programs is deemed essential in light of the substantial governmental backing and budgetary allocations that have gone into them across the world. This is followed by an investigation of whether or not entrepreneurial training and intention are linked through human capital. It is clear

that entrepreneurship training and education have a positive impact on students' desire to start their businesses. It's also a good idea to emphasize university-based entrepreneurship education programs to boost student entrepreneurial success.

The link between human capital and entrepreneurial development is best described as many presumptive causes, i.e., human capital is essential via a particular mix of its indicators. There are disparities in the impacts of general and particular human capital on export trajectory and intensity when looking at the effects of both firm-specific and public human capital. Export trends and power are affected by the firm's available human resources (education of business personnel). Still, only certain parts of human capital (work experience) influence the trend and Intensity of exports, while employee training has no impact. In addition, the company's human resources have a more substantial influence on export behavior than the impact of a single employee.

Human capital is typically seen as a significant contributor to economic growth in the new growth literature. As a result of this reasoning, it may be deduced that the average number of hours worked per employee, rather than the total number of employees, is more critical for achieving substantial growth. Access to goods and services, as well as the ability to attract money, are all essential components of change. Inflation, on the other hand, has minimal influence on growth, while the amount of employment has a negative effect. Economic growth is adversely affected by a country's supply of human resources, whereas the average working hours are positively influenced. Domestic investment and employment levels seem to be the key drivers of development in emerging nations.

The direction of the positive effect connection when one variable changes and responds to other factors shows that health and education investments have a mutually reinforcing benefit. That's in line with the human capital theory, which says that having a high level of human capital has a positive impact on one's ability to do one's job well. Some South Asian nations' human capital development may be explained by looking at the link between market size and growth rate and other financial development indicators. It is a no-brainer that nations with larger markets and quicker economic growth have more excellent rates of human capital development.

Economic development in sub-Saharan Africa (SSA) is not influenced by foreign direct investment (FDI) or human capital in any significant way, according to the findings of this study. As a result, the spillover benefits of foreign direct investment (FDI) are not being absorbed and turned into economic growth in SSA. We can see a long-term relationship between the accumulation of human and natural capital and GDP per worker. Productivity, employment, and income per capita are all boosted by human capital, which is a key driver of economic development. Economic growth and human capital development are critical components of financial products in developing countries. Economic development is heavily influenced by financial commodities. Human capital is essential to economic growth in developing nations.

Human and institutional development have a substantial impact on economic progress. The progress of emerging nations' economies is significantly harmed by developing their institutions and their people. When institutions are weak and dysfunctional, extra investment in human development is harmful to economic

growth since other stocks are more likely to be exploited for rent-seeking and unproductive social activities.

The link between human capital, economic freedom, government performance, and economic growth is mediated by institutional aspects like government performance and financial freedom. Human capital and economic growth have an inversely proportionate U-shape connection, not a linear one, according to empirical research. Human capital development (HCD) has been found to have a significant impact on economic growth when the link between foreign capital inflows and HCD is experimentally studied. When it comes to increasing in sub-regional economies, foreign and domestic investment (FDI), aid, human capital development (HCD), and GDP all have a positive correlation. Migration of official remittances, portfolio investment, and foreign debt negatively correlate with economic growth.

The dynamics of family inequality may be influenced by pollution and the health effects on children. In a model in which pollution and parental health investments endogenously affect children's health, we demonstrate that economies may display long-term inequality and get trapped in the inequality trap as pollution-induced disparity grows. As a means of funding pollution reductions, we investigate whether environmental policies requiring fees on polluting production might help resolve this issue. If the emission intensity is not high and the difference is not dramatic, we show that it may diminish inequality over time and make it feasible to get out of the trap. If parental investment in children's health is inefficient, we offer a policy mix that subsidizes extra health expenditure.

Human capital spillovers and public education investment are affected by the mobility of the labor market. A region human capital spillover framework based on endogenous growth theory was developed to examine the impacts of human capital spillover associated with limited labor mobility and differences in public education expenditure in China. In low-income communities, public education funding has been reduced as a result of improved social and economic conditions and a lack of financial incentives, developed regions have benefited from undeveloped regions' labor mobility. They are pursuing a variety of growth routes, each with a progressively varying level of financial investment and educational attainment.

## **CONCLUSION**

Learning new things, acquiring experience, and using cutting-edge technology are all ways to boost human capital. Declining human capital is directly related to one's educational attainment. Several research, especially those looking at how entrepreneurship impacts human capital and students' perceived entrepreneurial aspirations, show that entrepreneurship education and training is unproductive. In the new growth literature, human capital is usually considered as a substantial contribution to economic development. Investing in health and education has a positive impact on economic development, according to the human capital hypothesis.

The development of a country's economy depends heavily on the quality of its human capital. Improvements in the institutions and people of emerging nations are harmful. Developing nations' financial products must have features that encourage the expansion of human capital as well as the economy as whole.

Empirical studies show an inversely proportional U-shape relationship between human capital and economic development. When the relationship between foreign capital inflows and human capital development (HCD) is empirically explored, it has been proven to have a considerable effect on economic growth.

Pollution and the health consequences on children may alter the dynamics of family inequality. Assuming parental health care spending is ineffective, we propose an alternative policy mix that pays for additional medical expenses. Economic and social conditions in developed regions have been favorable, whereas incentives for education investment in low-income areas have been absent. This research is a content analysis research based on a literature study, so it is limited on the availability of literature.

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N/A

#### DECLARATION OF CONFLICTING INTERESTS

The authors declared no potential conflicts of interest

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