WJARR

World Journal of
**Advanced
Research and
Reviews**

World Journal Series
INDIA

(RESEARCH ARTICLE)

Check for updates

Imperatives of investing in human capital and innovation for a sustained entrepreneurial growth in Nigeria

MUHAMMED ADAMU OBOMEGHIE *

Department of Stastisitics, Auchi Polytechnic, Auchi, Nigeria.

Abstract

Investment in innovation and human capital together with other business enhancing policies and infrastructures of a country are recognized as the key drivers of entrepreneurship growth of the economy. This study examines the imperatives of investment in human capital and innovation for entrepreneurship growth in Nigeria. Data from 2011 to 2022 were collected for the study. Structural Vector Autoregressive (SVAR) technique is used to estimate the collected data. The result indicates that there is a positive relationship between innovation investment and entrepreneurship growth. The study also discovered that there is a positive relationship between human capital development and entrepreneurship growth in the early period. The implication of the findings is that, investment in innovation and human capital development in Nigeria should be encouraged and taken as deliberate policy by the Nigeria government. The study recommends that more investments should be channeled into innovation activities such as R & D as well as, human capital development activities such as, quality education and training, also taking cognizance of other variables that compliment entrepreneurial growth like good governance and efficient legal framework.

Keywords: Innovation Investment; Human capital; Entrepreneurship growth; Research and Development; Governance structure

1. Introduction

The world business environment is constantly evolving due to the effect of ICTs which has changed the approaches, methods and styles for creating product and distribution of goods, services and technical information. Entrepreneurial growth is an essential element for any country's job creation, poverty reduction and economic growth. This is because entrepreneurship have been variously described as the process of identifying opportunities in the market place, marshalling the resources required to pursue these opportunities and investing resources to exploit the opportunities for long-term gains (Ibekwe, et al, 2021). Also, entrepreneurship has been described as the capacity and willingness to develop, organize and manage a business venture along with any of its risks in other to make a profit (John & Ibenta 2017).

In a similar note, Nwokebuife, et al (2021), noted that, entrepreneurs are individuals who start (build), develop and manage a business enterprise to make a profit or benefit from it. In a separate study, Antonites & Van-Vuuren (2014) equally noted that, in modern days, entrepreneurs are viewed as individuals with the potential to revolutionize production patterns by using innovation. From the foregoing, one can conclude that modern entrepreneurship is synonymous with innovation. However, innovation as an economic policy has rapidly gained ground in recent years, hence, quite a number of scholars have defined entrepreneur in terms of innovations. For example, Bruton, Ahlstrom & Obloj (2007), defined entrepreneurs as people who engage in profitable entrepreneurial activities which includes identifying, seizing and using opportunities inside already existing businesses (or by establishing new ones) in order to foster innovation by providing innovative services or goods. Consequently, investments in innovation have become a

---

* Corresponding author: OBOMEGHIE AM

deliberate government economic policies by both the developed and developing countries of the world. Feldstein (2017) stated that the US economy is the biggest in the world because of its entrepreneurial culture, that is, individuals in the U.S. demonstrate a desire to start businesses and grow them, as well as, a willingness to take risks. Even students who have gone to colleges or business schools show this entrepreneurial desire, and it is self-reinforcing: Silicon Valley successes like *Facebook* inspire further entrepreneurship among the U.S citizens.

In discussing entrepreneurship and innovation in the context of developing countries, Africa countries and its peculiar situation must be taken into consideration. This is because innovative entrepreneurs in developing countries are confronted with far more intense obstacles such as, access to funds which enable them to have access to other entrepreneurial enabling infrastructures including, adequate power supply etc.

Although Nigeria's dependence on oil and agricultural products has been described using diverse time intervals, little attention has been paid to the relationship between human capital development and diversification. Economic activities are directly or indirectly sustained by human capital development,(Mgbemena, 2023). Nigeria is regarded as poor not because of its population, but because it is unable to efficiently harness the potentials represented by the population for economic growth and development.

In a related development, Diebolt & Hippe (2019) reiterated that economic growth could be spicy or slow down if knowledge capital-based innovations are not recouped adequately because, increasing the number of entrepreneurs in an economy make a significant difference towards building knowledge capital which is a cardinal fulcrum of economic.

Traditionally, growth has been explained in terms of factor accumulation: more capital and labor result in more growth. The relationship between human capital and growth in the Nigerian context is further echoed by the work of Idongeset, et, al. (2021), who studied the role of higher education in human capital development. They emphasized the need for education, especially higher education in the area of teachers' colleges and universities. They argued that the main reason for including education is because the role of education in the accumulation of human capital is emphasized in growth theory. It is clear from this observation that higher educational acquisition with requisite skills helps in growth. Furthermore, they employed the use of mean years of schooling in their empirical analysis, knowing full well that this is highly linked to human capital theory, which further links the activities of entrepreneurs and the welfare growth of a nation.

On the whole, the importance of entrepreneurship growth and the reasons why Nigeria has not achieved its desired goals from its entrepreneurial activities like in the developed or Asia emerging economies have become ever topical and disturbing to economists, researchers, policy makers and the political elite over-time despite the resources invested along this line. Hence, the problem has become an urgent issue that needs to be confronted by every rational Nigeria.

1.1. Research Objectives

- To examine the impact of innovation investment on entrepreneurial growth in Nigeria
- To assess the impact of human capital development on entrepreneurial growth in Nigeria

1.2. Research Hypotheses

- **H_{o1}**. There is no positive relationship between Innovation investment and entrepreneurship growth in Nigeria.
- **H_{o2}**. There is no positive relationship between Human capital development entrepreneurship growth in Nigeria.

This study is significant to the Nigeria policy makers, investors or potential entrepreneurs, as well as, academic and industry researchers.

2. Review of related literature

2.1. Innovation investment and entrepreneurship growth

It is necessary that countries and industries must invest in innovation because innovation is the bedrock of entrepreneurship. This is further buttressed by the fact that, entrepreneurial opportunities are significantly influenced by innovation; hence entrepreneurs can assist the economy in growing innovative strategies to redistribute resources, reforming consumption habits that do not generate the greatest benefit and supporting structural reforms (Prelipcean & Ungureanu, 2023).

Some authors' definition of innovation has a strict technological approach; hence their focus is on technological innovation, which may be seen as the outcome of technologically knowledge-intensive entrepreneurship as opposed to product and process advancement (Khajeheian, (2014).

Innovation investment at the national level reflects the ability of a country to generate novelty in the techniques it uses and the products and services it makes for the local and international market (Fagerberg & Sriolc 2008). On the other hand innovation investing refers to a focus on companies that offer innovative solutions while creating new markets, increasing market share or enlarging an existing market (Lazonick, 2023). This concept has gained momentum over the past few years because such innovations can bring expansion on the new market, new customers segment, additional revenue stream, and more profitability. Usually, to become more innovative, countries or industries must invest in Research and Development, education and infrastructure as well as to create a supportive environment that encourages entrepreneurship and risk-taking.

## 2.2. Why some countries or business are more innovative than others.

According to Wang (2016), the reason why some countries are more innovative than the others can be attributed to the following;

- *Economic Factors:* More innovative Countries have a competitive and diversified economy that fosters entrepreneurship growth. They invest in research and development (R&D), infrastructure, and education to create a skilled and knowledgeable workforce to generate new ideas and technologies.
- *Legal Factors:* Strong legal and regulatory frameworks are also critical for innovation. Countries with well-defined and enforceable property rights, contract laws, and competition policies that provide a level playing field for businesses and foster innovation are better-off.
- *Political Factors:* A stable and supportive political environment is essential for innovation. Countries that have governments that are committed to promoting innovation, investing in R&D, and creating policies that incentive businesses to innovate also have a strong public-private partnership that facilitates collaboration and knowledge sharing.
- *Educational Factors*: A well-educated workforce is a crucial driver of innovation. Countries with high-quality education systems that produce skilled workers who can adapt to changing technologies contribute more to innovation.
- *Societal Factors:* An innovative culture is a critical factor in promoting innovation. Countries that have a culture which values creativity, experimentation, and risk-taking as well as, a strong start-up ecosystem that provides support and funding for new businesses and entrepreneurs are better in innovations.
- *Cultural Factors:* More innovative countries have a diverse and inclusive culture that encourages innovation. They promote diversity and inclusion in the workplace, which leads to better problem-solving and innovation outcomes. They also have a strong culture of collaboration and knowledge sharing that fosters innovation.

The World Bank report (2022) stated that, the global innovation index shows that innovation is a critical economic growth and a development driver. The study noted that the top 25 innovative countries have invested in creating an ecosystem that supports innovation and has strong institutions, policies, and practices that enable them to leverage innovation for economic and social progress. The report concluded that entrepreneurship and innovation are two very closely related phenomena, in the sense that innovation requires some form of entrepreneurial behaviour. The terms are however not synonymous, hence there are reasons in some case to make a clear distinction between them – particularly from a policy perspective.

According to Uygun & Gujarati (2020), entrepreneurship and innovation are two sides of the same coin, while entrepreneurship is about identifying and taking advantage of opportunities, innovation is about finding new and better ways of doing things. The relationship between the two is complex, but at its core, it's about creating value in the marketplace. Entrepreneurship is about starting and growing a business, and innovation is about finding new and better ways to create value for customers.

Goni & Maloney (2017) noted that, less developed countries invest far less in research and development (R&D) as a share of their GDP than rich countries. Even middle income countries often invest well under 0.5%, compared to 3% and above in advanced countries. This fact poses a profound development mystery, and at the surface, suggests huge missed opportunities. Estimates of the social rates of return to R&D - often above 40% - in advanced countries are so high, as to justify levels of investment in developing countries that are multiples greater than those actually found. The case appears to be particularly strong for poor countries, where R&D is essential to the "absorptive'' or "national learning'' capacity that is needed to exploit technological advance originating from rich countries.
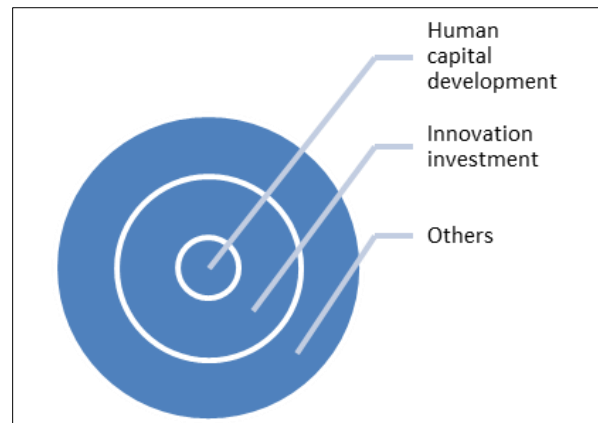
Source; Authors perception

Figure 1 Relationship between human capital and innovation investment on entrepreneurial growth

2.3. Nexus between HCD and entrepreneurship growth

Various studies have examined the relationship and impact of HCD on entrepreneurial growth. While some studies have divided HCD into General HCD and specific HCD, others who used education as the direct proxy of HCD have further subdivided education into three groups (Primary, Secondary and Tertiary). Although, most of the studies found a positive relationship between HCD and economic growth, few others found no relationship between HCD and economic growth. Studies by Lazear (2005), noted that investing in general human capital has positive effects on both entry and performance of entrepreneurs because, increase in HCD leads to a broad knowledge base which enables entrepreneurs to integrate new knowledge and adapt to new situations more easily.

Some researcher however, suggests that it is necessary to consider the type of education because, beyond secondary education, (higher education) may not have an additional positive effect on entry into commercial entrepreneurship (Parker & Belghitar, 2006). This is because highly educated individuals are more likely to be engaged in paid wages by Governments, multinational companies etc.

Yuliarmi et al (2021) investigated the impact of social capital and human capital on investment and SME attainment. The analysis used a sample of 203 SME groups. The study used the path approach to examine the variables of the study and conclude that, social capital had a positive impact on SME's access to finding more than human capital with 1% and 6% access respectively.

Arshed, et al, (2024) empirically investigated the contribution of human capital to entrepreneurship. They subdivided human capital development into three sub levels of education and collected samples from 103 countries. The analysis utilized the Feasible Generalized Least Square (FGLS). The analysis indicated that all three levels of education form U-shaped relationship with entrepreneurship in the overall model. However, studies such as Van der Shuis, et al, (2008) found no relationship between HCD and economic growth especially in the developed countries.

3. Methodology

The SVAR model is formulated and utilized for the analysis. All the variables used in the analysis are treated as both endogenous variable and a function of all variables in lags. The model can be represented as follows:

$$Y_t = (y_{1t} \ldots\ldots y_{2t} \ldots\ldots y_{st})$$

where s = 1 ……. p. A structural Var (p) process is then defined as

$$YAZ_+ = (A_0 + C(L)_{t-1} + \beta_{\in t})$$

where A is a (k x k) coefficient matrix, Z, a (k x1) vector, A_0 is a (kx1)vector of intercept, C(L) is a (k x k) matrix of lag with length L. B expresses the linear relationship between a structural shock and the others in a reduced form (A (k x k) matrix.$\in t$ is a (k x 1) structural noise which are uncorrelated and identically normally distributed. The model is presented below;

$$\begin{bmatrix} Variables \\ ENTRE_t \\ HCD_t \\ INNOV_t \end{bmatrix} \begin{bmatrix} ETD & FDI & GII \\ 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} = \begin{bmatrix} Error\ term \\ U_t \\ U_t \\ U_t \end{bmatrix}$$

$$\begin{bmatrix} Variables \\ ENTRE_t \\ HCD_t \\ INNOV_t \end{bmatrix} \begin{bmatrix} ETD & FDI & GII \\ b11 & 0 & 0 \\ 0 & b12 & 0 \\ 0 & 0 & b13 \end{bmatrix} = \begin{bmatrix} ETD & FDI & GII \\ 1 & NA & NA \\ NA & 1 & NA \\ NA & NA & 1 \end{bmatrix}$$

$$\begin{bmatrix} Variables \\ ENTRE_t \\ HCD_t \\ INNOV_t \end{bmatrix} \begin{bmatrix} ETD & FDI & GII \\ C_1 & 0 & 0 \\ 0 & C_2 & 0 \\ 0 & 0 & C_3 \end{bmatrix}$$

Structural VAR estimates on short-run and long-run pattern matrix Variables.

These matrices are computed and used to calculate the structural impulse response functions which are used to determine the path of the effect of the structural shocks of the variables. The simultaneous equation for the aforementioned matrix SVAR can be stated as follows:

$$LENTRE = \propto_o + \sum_{t=1}^{p} \propto_{11}^{ij} LHCD_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LINNOV_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LENTRE_{t-1} + e_t^{IENTRE}$$

$$LHCD = \propto_o + \sum_{t=1}^{p} \propto_{11}^{ij} LENTRE_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LINNOV_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LHCD_{t-1} + e_t^{LHCD}$$
$$LINNOV = \propto_o + \sum_{t=1}^{p} \propto_{11}^{ij} LHCD_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LINNOV_{t-1} + \sum_{t-1}^{p} \propto_{11}^{ij} LENTRE_{t-1} + e_t^{LGINNOV}$$

3.1. Definition of Variables

- *Human Capital Development;* Nigeria data from the global human capital index (HCD) is used in this study. The term human capital in this study refers to the economic value of a worker's experience and skills. It is based on an annual ranking of countries by their capacity for, and success in factors such as education, training, intelligence, skills, health, and other factors that employers value such as loyalty and punctuality.
- *Innovation Investment;* The Global Innovation Index (INNOV) is used in capturing investment in innovation. It is based on an annual ranking of countries by their capacity for, and success in innovation.
- *Entrepreneurship growth;* In quantitative studies, entrepreneurship growth (ENTRE) is usually represented by proxy variables, such as, self-employment rate, number of new firms, growth rate of new firms, and share of small and medium-sized enterprises. Data on new business registration is used in this study.

4. Results and Discussion

The summary of the unit test is presented in table 1 below.

Table 1 Summary of panel unit root test

Variable	Order	ADF test	PP test	5% critical value	Conclusion
D(ENTRE)	1 (1)	-1.825916 (0.0647)	-1086427 (0.0569)	-2.86	Stationary
D (HCD)	1 (1)	-0.707031 (0.4086)	-2.97581 (0.0032)	„	Stationary
INNOV	1 (0)	-1.519920 (0.1201)	-2.90127 (0.0040)	„	Stationary

Source; Authors computation using E-view econometric packages

From table 2 above, one may observe that all the variables used in this study are significant at the first difference except INNOV which is stationary at levels.
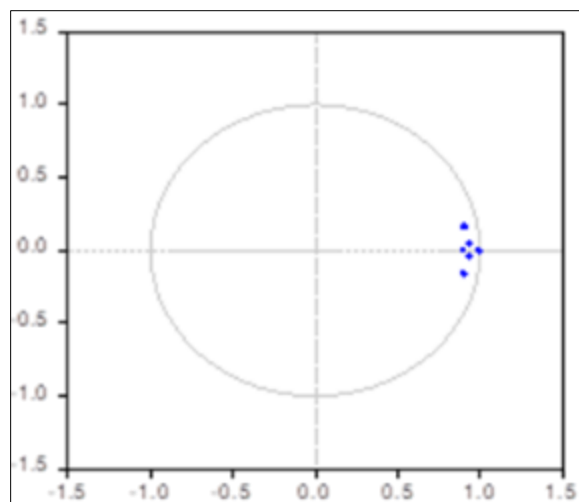
Figure 2 Inverse roots of AR characteristics

From the inverse roots of AR characteristics polynominal presented in fig 2 above, it can be observed that all our inverse roots are within the unit circle. This further consolidates the position that the process is stationery.

From Fig. 3 which is the impulse response to SVAR innovation 2±SE, it can be seen that the response of ENTRE which is shock 1(own shock) starting from period one, stayed above the mean line with a sustained increase all through to point 10. With respect to ENTRE on HCD it can be seen that the response of HCD to ENTRE initially exhibited a positive from period one before resting on the mean line before showing a positive. Finally, the response of ENTRE to the shock of INNOVI started slightly above the mean line and continued till period 7 where it became marginally negative.
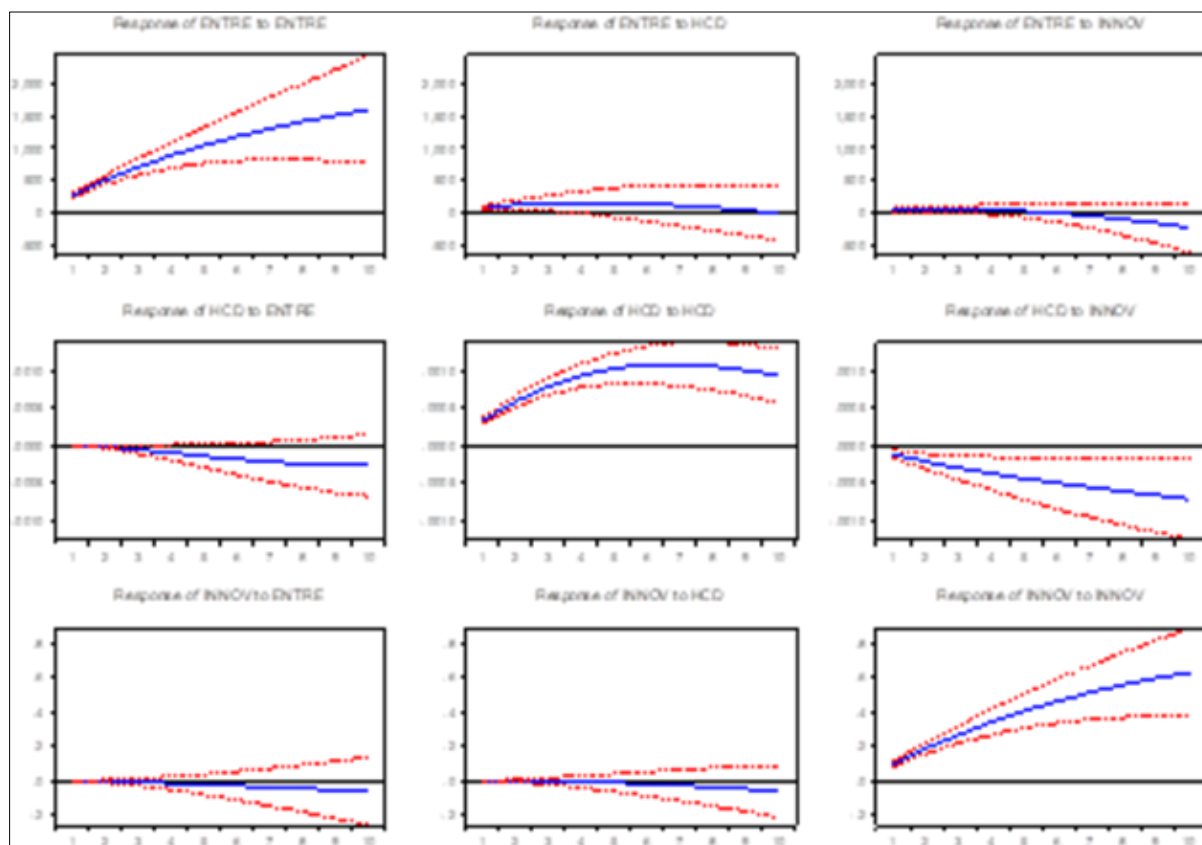

Figure 3 Impulse response characteristics of our variables

Equally, it can been seen that the response of HCD to ENTR which is shock 1 starting from period one, stayed below the mean line but exhibited a fairly stable deposition all through to point 10.With respect to HCD on HCD which is the own shock it can be seen that the response of HCD to HCD stayed above the mean line from period one to period 10. Finally, the response of HCD to the shock of INNOV clearly indicates that HCD started below the mean line and continued deeper till period 10.

Finally, it can been seen that the response of INNOV to ENTRE which is shock 1, starting from period one, stayed below the mean line all through to point 10.With respect to INNOV on HCD it can be seen that the response of INNOV to HCD again exhibited a negative positive from period one until period 10. Finally, the response of INNOV to own shock, started above the mean line and continued to increase till period 10.

5. Discussion of Result

From the impulse response of the relationship between innovation investment, Human capital development and entrepreneurship growth, it is observed that there is a positive relationship between HCD and entrepreneurship growth in the early stages. However, on the long-run the influence of HCD on entrepreneurship growth fizzled-out, indicating that on the long-run HCD have little or no effect on entrepreneurship growth. This is in line with similar findings by Davidson and Hong (2003). With respect to the effect of innovation investment on entrepreneurship growth, it can be observed from the analysis that at the initial stage, innovation investment exerted a mild positive effect on entrepreneurship growth, while on the long-run; it exerted a negative effect on entrepreneurship growth. This is because; the level of investment on innovation is still very low in Nigeria. This is further confirmed by the lower global innovation index score for Nigeria. This position is confirmed by similar study by Hemen et al (2016).

6. Conclusion

This study has examined the impact of innovation investment and human capital development and entrepreneurship growth in Nigeria. The study is designed to assist policy makers in formulating and implementing policies that will lead to improvement of entrepreneurship growth in Nigeria. The study showed that both the index of HCD and innovation contribute significantly and positively to entrepreneurship growth in Nigeria, although it is observed that Nigeria does not invest adequately in innovation compared to the similar investment by advanced countries.

Equally, the study have shown that investment in HCD in Nigeria is still low because, many entrepreneurs and business owners in Nigeria don't have the prerequisite education and training needed to efficiently establish and operate businesses that can compete globally. This is in line with similar study by Adisa, et al (2014).

6.1. Policy implications

The policy recommendations advocated for Nigeria on the basis of the analysis carried out in this study are enumerated as follows:

Nigeria must increase its investment in innovation because, empirical data presented in this analysis has shown that increase investment in innovation impacts on entrepreneurship growth more than most other investment. This position is further confirmed by the work by Soete, Verspegen & Ziesemer, (2022). Equally, investment in HCD has been shown to be the highest front-runner in entrepreneurship development in developed economies (Joshi, 2017). Consequently, Nigeria should make cautious efforts to further develop and encourage human capital development.

Compliance with ethical standards

Disclosure of conflict of interest

I declare that there is no conflict of interest with respect to my submitting this this work for publication in the WJARR. I will be liable for any of such actions.

The author did not receive funding assistance from any agency or organization

References

[1] Adisa, A. T., Abdulraheem, I. & Mordi, C. (2014). The characteristics and challenges of small businesses in Africa; an exploratory study of Nigeria small business owners. Economic Insight-Trend and challenges. 3 (48). 1-4.

[2] Antonites, A. J., & Van Vuuren, J. J. (2014). Inducing Entrepreneurial Creativity, Innovation and Opportunity-Finding Skills. South African Journal of Economic and Management Sciences, 8, Article No.11197. https://doi.org/10.4102/sajems.v8i3.1197.

[3] Arshed, N., Ray, R & Bukhari, S. (2021) Empirical Contribution of Human Capital in Entrepreneurship. Global Business Review 25(3).

[4] Badamosi, U. B (2022). Human capital development and economic growth in Nigeria. Palac Management Review 2 (2) 268-277.

[5] Bjuggren, M.C, Johansson, D. & Stenkula, M. (2012) Using Self-employment as Proxy for Entrepreneurship: Some Empirical Caveats. International Journal of Entrepreneurship and Small Business 17(3)DOI: 10.1504/IJESB.2012.049578

[6] Bruton G.D, Ahstrom D, & Obloj K. (2007). Entrepreneurship in emerging economies: Where are we today and where should be research go in the future. Entrepreneurship Theory and Practice, 2007;32(1):1-14

[7] Davidson, P. & Hong, B. (2003). The role of social and human capital among nascent entrepreneurs. Journal of Business Venturing 18 (3). 301-331.

[8] Diebolt, C & Hippe, R. (2019). The long-run impact of human capital on innovation and economic growth in the regions of Europe. Applied Econometrics. 51, 5.

[9] Dike, C.K. (2020) Entrepreneurship and HCD in Nigeria Delta Area. International Journal of Social Science and Humanities Reviews 10(1). 191 – 198 ISSN: 2276-8645

[10] Eke, P. O., Okoye, L. U., & Evbuomwan, G. O. (2017). Entrepreneurship and financial deepening in selected African Economies: Does human capital development matter? Innovation Management and Education Excellence through Vision 2020, 6258-6273.

[11] Fagerberg, J. & Sriolc, M. (2008). National innovation systems, capabilities and economic development. Research Policy, 2008, vol. 37, issue 9, 1417-1435.

[12] Feldstein, M. (2012). Why the US is still richer than every other large country. Harvard Business Review. Harvard Business Publishing USA.

[13] Goni, E. & Maloney, F.W. (2017). Why don't poor countries do R & D? Varying rates of factor returns across the development process. European Economic Review19, 126-147

[14] Griffith, R., Huergo, E., Mairesse, J.,& Peters, B. (2006a), "Innovation and productivity across four European countries", Oxford Review of Economic Policy, Vol. 22, pp. 483.

[15] Guo, B., Wamg, J. & Wei, X.S. (2018). R & D spending, strategic position and firm performance. Frontiers of Business Research in China. 12(14) DOI.org/10.1186/s11782-018-0037-7.

[16] Hemen, F.P., Uguru, C. & Obiekwe, D.A. (2016). The role of innovation in the economic development in Nigeria. International Journal of Innovation Research and Development. 5 (6) 500-518.

[17] Ibekwe, A. O., Ogbonnia, A. A.. & Ibekwe, A. I. (2021). Financial Inclusion and Entrepreneurship Development in Nigeria. JETMASE 3(1): 90 –104, December, 2021.

[18] Idongeset, D., Esohe, G.O.D. & Ugo C.O. (2021). University education and its impact on human capital development in Nigeria. Studi Sulla Formazion 24, 113-125.

[19] John, I. E. & Ibenta. N. S. (2017). Financial Deepening and Entrepreneurial Growth in Nigeria. Research Journal of Finance and Accounting. 8 (20). ISSN 2222-2847 201740.

[20] Joshi, M. (2017). The connection between entrepreneurship and innovation. Available at SSRN. http://dx.doi.org/10.2139/ssrn.2993091.

[21] Khajeheian, D.A. (2014). Perspective on media entrepreneurship policy; Globalization of knowledge and the opportunities for developing economies. Journal of Globalization Studies. 5; 3-16

[22] Lazear E. (2005) Entrepreneurship. Journal of labor Economics. 23. 649-680.

[23]   Lazonick, W. (2023). Investing in innovation, confronting predatory value extraction in the US corporation. Cambridge University Press. ISBN: 9781009410700

[24]   Mgbemena, O. (2023). An econometric simulation of HCD and activity sector productivity in (2021). the impact of creativity and innovation on entrepreneurship development; evidence from Nigeria. Open Journal of Business and Management. 9 (4)1743-1770.

[25]   Nwokebuife, O.J., Han, J.H., Mintah, C., Ejiofor, N. S. & Ofori, K.E.

[26]   Prelipcean, G. & Ungureanu, A. (2023). Entrepreneurship in Emerging Economies: The Role of Innovation and Institutions. Entrepreneurship–New Insights. DOI:10.5772/intechopen.109893.

[27]   Juliana, N. O., Hui. H J., Clement, M., Solomon E.N., & Elvis, O.K. (2021). The impact of creativity and innovation on entrepreneurship development. Evidence from Nigeria. Open Journal of Business and Management. 9 (4) 1741-1770. DOI: 10.4236/ojbm.2021.94095

[28]   Parker, S. C. & Beighitar, Y. (2006). What happens to nascent entrepreneurs? An econometric analysis of the PSED. Small Bus Econ 27 81-101

[29]   Soete, L., Verspagen, B. & Ziesemer, W.H.T. (2022). Economic impact of public R and D; An international perspective. Industrial and Corporate Change. 31, 1-8 DOI:1093/icc/dta066.

[30]   Unger, J.M. Rauch A. Frese M & Rosenbush N (2011) Human Capital and Entrepreneurial Success, a meta – analytical review. J. Bus Venture 26 (3) 341-358.

[31]   Uydun, H & Gujarati, R. (2020). Entrepreneurship and innovation; two sides of the same coin. SMS journal of Entrepreneurship and innovation 6 (2) 11-20

[32]   Van de Sluis L, Van Praag M & Vijivrberg (2008) Education and Entrepreneurship selection and performance; A review of the empirical literature. Journal of Econ. Surv. 22(5) 795-841.

[33]   Wang, J. (2016). the politics of innovation. Why some countries are better than others at science and technology 96 (1). ell DOI:10.1093/sf/sox016

[34]   World Bank (2022). World Development Report. www.worldbank .org.

[35]   Yulliarmi, N. N, Martin, Dewi N. P. Rustariyumi, S. D & Marhaeni, G. A. (2021) The effects of Social Capital and Human resources on Financing and SMEs performance. International Journal of Human Capital in Urban Mgt 6(1) pp 29-44.