

Entrepreneurship Milieus and Poverty mitigation: a Topical Universal Correlation Informing Poor Countries with Adverse Entrepreneurial Ecosystems

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ABSTRACT: *The paper analyzes the empirical relationship between the entrepreneurial ecosystems, measured as Global Entrepreneurship Index (GEI) Scores, and poverty mitigation levels, quantified as Gross National Income (GNI) per capita, purchasing power parity (PPP), for all the countries in the world in the recent past. Specifically, the study seeks to find out whether there is a statistically significant relationship between the GEI Scores and the GNI Per Capita, PPP of 134 countries for the year 2019. The research is a cross-sectional, desk-top triangulation of correlational, associational, hypothesis-testing & comparative analysis of empirical relationships between the key variables of the study. Data on GEI Scores were got from the Global Entrepreneurship Index report of 2019 published by the Global Entrepreneurship Development Institute. Data on the GNI Per Capita, PPP are got from the World Bank's development Indicators. The study results show that there is a significant positive relationship between the GEI scores and the GNI Per Capita, PPP of all the countries of the world. Therefore, Countries with relatively higher GEI Scores (favorable entrepreneurial ecosystems), generally have more GNI Per Capita, PPP (less poverty) than their counterparts. It is, therefore, recommendable for all countries to conscientiously establish, facilitate and sustain environs that are conducive for the growth and prosperity of entrepreneurs as a measure for mitigating poverty.*

KEY WORDS: *Entrepreneurial-ecosystem, Gross-National-Income, Poverty.*

I. Introduction

1.1 Background and Motivation of the Study

Entrepreneurship generally leads to various social-economic benefits that include generation of employment opportunities, economic growth, household incomes, products and services among other elements of a stable, civil and prosperous society^[1]. However, many countries, especially the low-income economies, do lack favorable conditions and facilitation for the establishment and growths of productive and developmental entrepreneurs^[1]. As much as entrepreneurship is considered an important mechanism that promotes economic development through employment, innovation, and welfare, but it does not appear like manna from heaven as a country moves through the stages of development^[1]. Whereas all countries need flourishing entrepreneurs because of the social-economic benefits entrepreneurship often engender, not all countries, particularly the low-income economies, have supportive entrepreneurial environments^[2]. To be entrepreneurial, a

country needs to have the best entrepreneurs, not necessarily the most. What the “best and the brightest” do is important, and to support their efforts, a country needs a well-functioning entrepreneurial ecosystem^[1]. According to the Global Entrepreneurship Institute (GEDI), the quality of an entrepreneurial ecosystem is determined according to how the following pillars shape and influence entrepreneurial attitudes, abilities and aspirations in a country: opportunity perception, start-up skills, risk acceptance, networking, cultural support, opportunity start-up, technology absorption, human capital, competition, product innovation, process innovation, high-growth businesses, internationalization, and risk capital^[1].

A glance at the Global Entrepreneurship Index (GEI) scores, which rank the entrepreneurial ecosystems of over 130 countries^[1], and the Gross National Income (GNI) Per capita, Purchasing Power parity (PPP) of all economies that is presented by the World Bank^[3], indicates that more of the high-income countries seem to have more favorable entrepreneurial ecosystems (i.e. higher GEI scores) than the middle and low income countries^[1]. This implies that, at a global perspective, poverty levels, which are best indicated by GNI per Capita, PPP, are apparently correlated to entrepreneurial ecosystems, which are also most appropriated represented by the GEI score. This apparent relationship is an exciting research gap that calls for a scientific investigation the relationship the GEI Scores and their corresponding GNI per capita, PPP for all the countries in the world. Thus, this research gap is the focal motivation for this paper to analyse the statistical relationships between the most recent GEI Scores and their corresponding GNI per capita, PPP as key variables of poverty mitigation and entrepreneurial ecosystems for all the countries of the world. Several previous studies/works indicate a relationship between poverty levels and entrepreneurship but these previous works are premised on study variables, time and geographical scopes, units of analysis and research methodologies that are different from those stimulating this study^{[4] [5] [6] [7] [8]}. Hence, this study analyses the empirical relationship between the entrepreneurial ecosystems, gaged as GEI scores, and the poverty mitigation levels, measured as GNI Per Capita, PPP, of all the countries of the world in the recent past.

1.2 Research Problem Statement

Albeit the social-economic importance of entrepreneurship, many countries, and especially the low-income countries, do not have favorable conditions for the establishment and growth of productive entrepreneurs. An overview of Global Entrepreneurship Index (GEI) scores of 2019 indicates that countries with higher poverty eradication levels, measured as GNI per capita, PPP, generally have much better entrepreneurial ecosystems than their counterparts^[1]. This implies that apparently there is a significant relationship between the entrepreneurial ecosystems, measured as GEI scores, and the poverty eradication levels, computed as GNI Per capita, PPP, that is worthy investigating at a global level in the recent past. Several previous studies show a relationship between entrepreneurship and poverty mitigation but they were based on study variables, units of analysis, time and geographical scopes that are different from the focus of this study^{[4] [5] [6] [7] [8]}. Therefore, this study analyzes the empirical relationship between the entrepreneurial ecosystems, measured as GEI scores, and the poverty eradication levels, quantified as GNI Per Capita, PPP for all the countries in the world during the year 2019.

1.3 Purpose and Objective of the Study

The purpose of the study is to analyze the empirical relationships between the entrepreneurial ecosystems (measured as GEI scores) and poverty mitigation levels (measured as GNI Per Capita, PPP) of all the countries in the world for the year 2019.

The specific objective that guides of the study is: to find out whether there is a statistically significant empirical relationship between the GEI scores and the GNI Per Capita, PPP of all the sampled countries for the year 2019.

The specific objective stated above transforms into the following key research question: *“Is there a statistically significant empirical relationship between the GEI scores and the GNI Per Capita, PPP of all the sampled countries for the year 2019?”* This key research question is addressed concurrently with the following null hypothesis - H_0 : *There is no statistically significant empirical relationship between the GEI scores and the GNI Per Capita, PPP of all the sampled countries for the year 2019.*

1.4 Contribution and Significance of the paper

The paper presents empirical facts and figures that can vitally enlighten and steer the drafting and / or improvement of policies for the mitigation of poverty and the improvement of entrepreneurship environments at national, regional, and global levels.

The study conveys practical guidance for all the countries, and especially the poor countries with unfavorable entrepreneurial ecosystems, on how to improve their respective entrepreneurship environments as a measure for reducing poverty. The paper also divulges the undesirable effects of adverse entrepreneurial ecosystems on the establishment and prosperity of entrepreneurs and their consequential advantages such as increased employment opportunities in every country on the globe.

The paper significantly and pragmatically contributes to the attainment of the Sustainable Developing Goal number one, which is the mitigation of poverty at a universal level.

The study also provides a practical basis for advancing research, strategy formulation and academic works that are particularly related to the mitigation of poverty and entrepreneurial ecosystems.

1.5 Contextual and Operational Definitions of Core Terms

The core terms of the study are contextually and/or operationally defined as follows:

Entrepreneurship is contextually defined as “the dynamic, institutionally embedded interaction between entrepreneurial attitudes, entrepreneurial abilities, and entrepreneurial aspirations by individuals, which

drives the allocation of resources through the creation and operation of new ventures.” This definition is adopted from the Global Entrepreneurship Development Institute ^[1].

*Global Entrepreneurship Index (GEI) Score:*The GEI measures the quality and dynamics of entrepreneurial ecosystems at a national and regional level ^[1]. The GEI score is thus, a measure of both the quality of entrepreneurship in a country and the extent and depth of the supporting entrepreneurial ecosystem. The GEI defines country level entrepreneurship as the National System of Entrepreneurship that constitutes of the dynamic, institutionally embedded interaction between entrepreneurial attitudes, abilities, and aspirations, by individuals, which drives the allocation of resources through the creation and operation of new ventures” ^[1]. The GEI strives to measure only productive entrepreneurship that both creates wealth and is scalable. GEI proposes five levels of index building as it includes the GEI super-index measuring entrepreneurship at the country level, three sub-index (attitudes, abilities and aspirations), 14 pillars, 28 variables and 49 indicators. All pillars contain an individual and an institutional variable component. Therefore, the GEI score represents the performance of the involved countries in terms of the quality of their entrepreneurial ecosystem. In other words, the Global Entrepreneurship Index Score is an important tool to help countries accurately assess and evaluate their respective ecosystems ^[1].

Entrepreneurial ecosystem: This refers to the increasingly complex and interdependent factors that influence the innovative, productive, and rapidly growing new ventures. The entrepreneurial ecosystem is not just the abundance or endowment of particular key factors of production or resources that shape economic performance, it is also the manner in which that economic activity is configured, or organized, within geographic space. They consist of multiple interactive elements, all of which need to be in sync in order for innovative and high-growth firms to prosper ^[1]. In brief, the entrepreneurial ecosystem refers to the environmental (macro-economic, social-cultural, political-legal, physiological, and technological) factors that influence the growths and prosperity of entrepreneurs in a country or region.

Gross National Income (GNI) Per Capita, Purchasing Power Parity (PPP): In the context of this study, GNI Per Capita is defined as the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad and that sum divided by the population of the country ^[3]. The Purchasing Power Parity (PPP) is the measurement of prices in various countries that uses the prices of specific goods to compare the absolute purchasing power of the countries' currencies. Accordingly, the PPP conversion factor is a spatial price deflator and currency converter

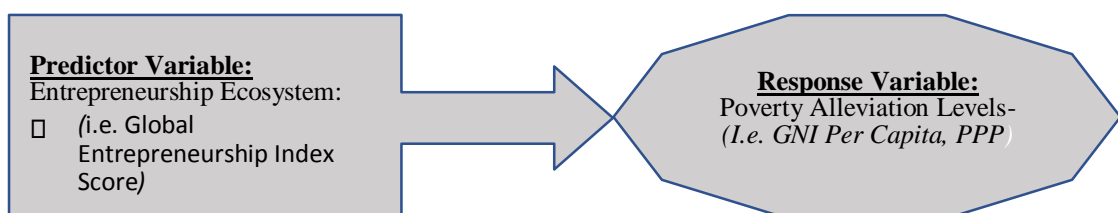
that eliminates the effects of the differences in price levels between countries. Therefore, GNI Per Capita, PPP is succinctly defined as the average GNI measured in terms of Purchasing Power Parity.

Poverty: There are several plausible definitions of poverty and the most widely held and understood definition of absolute poverty measures poverty strictly in economic terms — earning less than US \$1.90 a day. However, in the context of this study, poverty is holistically defined as: “a condition, financial or non-financial, that subjects and/or exposes someone to: hunger, lack of shelter, being sick and not being able to see a doctor, not having access to school and not knowing how to read, not having a job, fear for the future, living one day at a time, losing a child to illness brought about by unclean water, powerlessness, and lack of representation and freedom.” This definition is adopted from the World Bank and it covers living conditions, an inability to meet basic needs because food, clean drinking water, proper sanitation, education, health care and other social services that are inaccessible^[9]. Because this broader measure of poverty broadens the contributors and causes of poverty, the World Bank established indicators to assess the non-income facets of poverty as well. These indicators include education, health, access to social services, social exclusion, vulnerability, and access to social capital. Consequently, poverty is a complex problem with numerous aspects, faces and causes.

1.6 Conceptual and theoretical framework

The conceptual and theoretical framework of the paper ascends from a diagnostic and comparative overview of the global GNI Per Capita, PPP as Development Indicators presented by the World Bank and the GEI scores presented by the Global Entrepreneurship Development Institute for the year 2019. The theoretical framework is also considerably substantiated by the previous studies and works the relationship between poverty and entrepreneurship [4] [5] [6] [7] [8].

A universal comparative overview of the GNI Per Capita, PPP and the GEI scores ostensibly shows that, generally, countries with high GEI scores have higher GNI Per Capita, PPP than their counterparts. Thus, the conceptual framework of the study is stemmed from a postulation that the state of entrepreneurial ecosystem, as shown by GEI scores, has a significant and positive explanatory (causal) relationship with the levels of poverty, as indicated by GNI Per Capita, PPP for any country. Apparently, this relationship has not been analyzed in the recent past basing on the geographical scope, units of analysis, and key research variables that motivate this study. Thus, the conceptual framework of the study is as shown by Fig. 1 below:



Source: A global comparative overview of the 2019 data on GNI Per Capita, PPP presented by the World Bank; and GEI scores provided by the Global Entrepreneurship Development Institute (GEDI).

Figure 1: Conceptual framework of the study

Fig. 1 shows the linkage of the key variables that are conceptualized to be fundamental to the dynamics of the interrelationships that are analyzed in this paper. The predictor and response variables shown in Fig. 1 are respectively derived from the *Development Indicators* published by the World Bank and Global Entrepreneurship Index report published by the Global Entrepreneurship Development Institute [1] [3].

II. Methodology

The study is designed as a cross-sectional, desk-top, quantitative analysis that employs a triangulation of correlational, associational, hypothesis-testing, comparative approaches to investigate the empirical relationships between entrepreneurial ecosystems (i.e. GEI scores) and poverty mitigation levels (i.e. GNI Per Capita, PPP) for all the countries in the World during 2019. The units of analysis are the autonomous and semiautonomous countries as recognized by the World bank during the year 2019.

Data on entrepreneurial ecosystems is drawn from the Global Entrepreneurship Index report published by the Global Entrepreneurship Development Institute while data on poverty mitigation is derived from *Development Indicators* that are also presented by the World Bank as GNI Per Capita, PPP of all countries in the world for 2019. Data for the year 2019 was preferred to that of 2020 as the most recent referral statistics because the impact of the Corona virus/ Corvid 19 pandemic greatly disrupted the socio-economic status of most countries in the world. The main data for the study was principally quantitative.

The targeted study population and universal sample size is 134countries, which were purposively selected to cover all the countries in the world with the relevant and complete data sets, in order to get the most comprehensive universal comparative analysis of the key research variables for the year 2019.

The main research variables are measured exactly according to their respective sources. The GEI scores that serve as the predictor variables for the study are computed in exactly the same way as given by the Global Entrepreneurship Development Institute [1]. Likewise, the GNI Per Capita, PPP, considered as the response variable is measured exactly as given by *Development Indicators* that are published by the World Bank for the year 2019 [3]. The reliability and validity of the study emerge from

using the most relevant forms of empirical data that were methodically, skillfully, meticulously, diligently and ethically compiled and validated by the Global Entrepreneurship Development Institute and the World bank, which area both a dependable and ethical organizations. For instance, The GEI methodology, on which some of the data in this report is based, has been authenticated by rigorous academic peer review and has been widely reported in the media, including in The Economist, The Wall Street Journal, Financial Times, and Forbes ^[1].

Data were analyzed using mainly quantitatively techniques with the application of the Statistical Package for Social Scientists (SPSS) computer software to emerge with descriptive and inferential statistics. Being principally quantitative, the study is principally linked to the POSITIVISM research paradigm.

III. Presentation, Analysis and Discussion of Results

The study results are analyzed and discussed in form of descriptive and inferential (i.e. correlations and regressions) statistics, as presented below.

3.1 Descriptive Statistics

Descriptive statistics were utilized to demonstrate the relationships between the study variables and the results largely show that countries with comparatively low GEI Scores, on average, have significantly lower GNI Per Capita, PPP than their counterparts. These results are shown by Table 1, Fig. 2 and Fig. 3 below.

Table 1: Average GNI Per Capita, PPP and GEI Scores for the 10 Most and 10 Least Entrepreneur Friendly Countries in 2019.

10 Most Entrepreneurial Countries in 2019			10 Least Entrepreneurial Countries in 2019		
Country	GEI Score_2019	GNI Per Capita, PPP_2019	Country	GEI Score_2019	GNI Per Capita, PPP_2019
United States	86.8	66080	Chad	8.0	1620
Switzerland	82.2	72390	Madagascar	9.1	1660
Canada	80.4	50810	Burundi	10.2	790
Denmark	79.3	61960	Mauritania	10.5	5360
United Kingdom	77.5	47880	Malawi	11.6	1080
Australia	73.1	51760	Bangladeshi	12.5	5200
Iceland	73.0	61170	Sierra Leone	12.7	1770
Netherlands	72.3	59790	Mozambique	12.8	1310
Ireland	71.3	70010	Benin	13.3	3400
Finland	70.2	51670	Burkina Faso	13.4	2180
Averages/Mean	76.6	59,352	Averages/Mean	11.4	2,437

Source: Global Entrepreneurship Index report published by GEDI and Development Indicators published by the World Bank for the year 2019

Table 1 above shows that, on average, the 10 countries with the lowest GEI scores (i.e. averaging 11.4) have significantly lower GNI Per Capita, PPP (i.e. averaging US\$ 2,437) than their counterparts with the highest GEI Scores (i.e. averaging 76.6) whose average GNI Per Capita, PPP is US\$ 59,352. This difference is substantiated by the global comparative results shown by Table 2 and graphically illustrated by Fig.2 and Fig.3 below.

Table 2 below shows that most of the countries (over 95% of the countries) with GEI scores that are below the universal average GEI score of 33.9 also have GNI Per capita, PPP that is below the global average of US\$ 24,052. This, also, implies that there is a significant and positive relationship between the GEI scores (i.e. Friendly Entrepreneurship environment) and GNI Per Capita, PPP (i.e. poverty mitigation levels) as opposed to the null hypothesis of the study.

Table 2. A Global Comparison of GEI Scores & GNI Per Capita, PPP for 134 Countries 2019 (in a descending order of GEI Scores)

Country	GEI	GNI Per Capita	Country	GEI	GNI Per Capita	Country	GEI score	GNI Per Capita
United States	Score86.8	66080	Brunei	Score36.5	66590	Moldova	20.2	14330
Switzerland	82.2	72390	Croatia	36.1	29680	Rwanda	20.0	2250
Canada	80.4	50810	Greece	35.4	30470	Kenya	19.8	4430
Denmark	79.3	61960	Botswana	34.4	17140	Bosnia & H	19.5	15870
United Kingdom	77.5	47880	Colombia	34.1	15150	Tajikistan	19.4	4110
Australia	73.1	51760	Tunisia	34.0	10850	Kyrgyz Republic	19.2	5080
Iceland	73.0	61170	Thailand	33.5	18570	Côte d'Ivoire	19.1	5300
Netherlands	72.3	59790	Barbados	32.2	15770	Lao PDR	19.1	7980
Ireland	71.3	70010	Azerbaijan	32.1	14400	Sri Lanka	19.1	13260
Finland	70.2	51670	Montenegro	31.8	23270	Swaziland	18.8	8090
Sweden	70.2	57220	South Africa	31.6	12670	Guatemala	18.7	8870
Hong Kong	67.9	65730	Kazakhstan	31.0	24080	Ecuador	18.5	11540
Israel	67.9	41950	Bulgaria	30.1	24390	Suriname	18.4	15310
France	67.1	50460	Uruguay	30.1	21180	Myanmar	18.1	5170
Germany	66.7	57810	Namibia	30.0	9780	Cambodia	17.7	4320
Austria	64.9	59240	Iran	29.4	12950	Pakistan	17.3	4800
Belgium	62.2	55590	Jordan	29.4	10520	Tanzania	17.3	2700
Chile	58.3	24140	Costa Rica	28.8	19250	Ethiopia	17.2	2310
Korea	58.1	43520	Lebanon	28.8	14920	Honduras	17.2	5530
Luxembourg	58.1	77570	Serbia	28.6	17990	Gambia, The	17.1	2280
Estonia	57.8	38030	Morocco	28.3	7680	Libya	16.6	16130
Slovenia	56.5	40330	Peru	27.7	12790	Paraguay	16.6	12790
Norway	56.1	69610	Mexico	27.1	19990	Guyana	16.3	13540
United Arab Emirates	54.2	70430	Belize	26.2	6700	Zambia	16.3	3560
Japan	53.3	44810	Georgia	26.2	15260	Brazil	16.1	14890
Singapore	52.4	92270	Argentina	26.0	22120	Nicaragua	16.1	5440
Qatar	51.6	91670	Indonesia	26.0	11970	El Salvador	15.7	8720
Poland	49.5	33060	Vietnam	26.0	7910	Cameroon	15.6	3730
Puerto Rico	48.7	24300	Panama	25.5	30690	Guinea	15.5	2650
Spain	46.9	42260	Ukraine	25.2	13750	Mali	15.3	2350

Portugal	46.3	35790	India	25.1	6920	Angola	15.1	6380
Hungary	46.2	33580	Jamaica	24.8	9940	Liberia	14.8	1320
China	45.9	16790	Russia	24.8	28270	Uganda	14.8	2220
Cyprus	45.6	39830	Egypt	24.6	11840	Burkina Faso	13.4	2180
Italy	45.1	44630	Armenia	24.3	14500	Benin	13.3	3400
Lithuania	44.1	37170	Gabon	23.8	14350	Mozambique	12.8	1310
Bahrain	43.8	44250	Dominican	23.6	18300	Sierra Leone	12.7	1770
Oman	43.6	26210	Macedonia	23.1	16790	Bangladeshi	12.5	5200
Czech Republic	43.5	40640	Philippines	23.0	10230	Malawi	11.6	1080
Slovakia	42.6	33470	Algeria	22.4	11720	Mauritania	10.5	5360
Saudi Arabia	42.1	49520	Bolivia	22.1	8930	Burundi	10.2	790
Malaysia	40.1	28830	Trinidad and	21.7	27140	Madagascar	9.1	1660
Turkey	39.8	27660	Tobago Ghana	21.6	5530	Chad	8.0	1620
Latvia	39.3	31740	Nigeria	20.8	5190			
Romania	38.6	31840	Senegal	20.3	3470			
						AVERAGES	33.9	24,052

Source: Global Entrepreneurship Index report by GEDI and the Development Indicators by the World Bank for 2019.

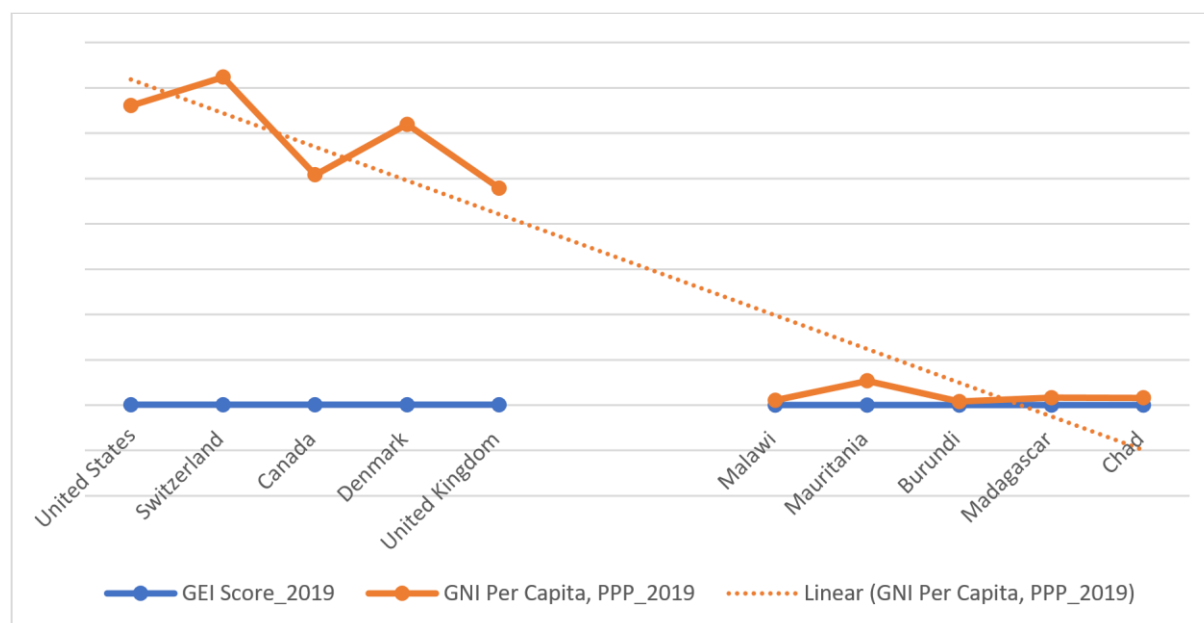


Figure 2 The GEI Scores and GNI Per Capita, PPP for the 5 Most & 5 Least Entrepreneur-friendly Countries for 2019

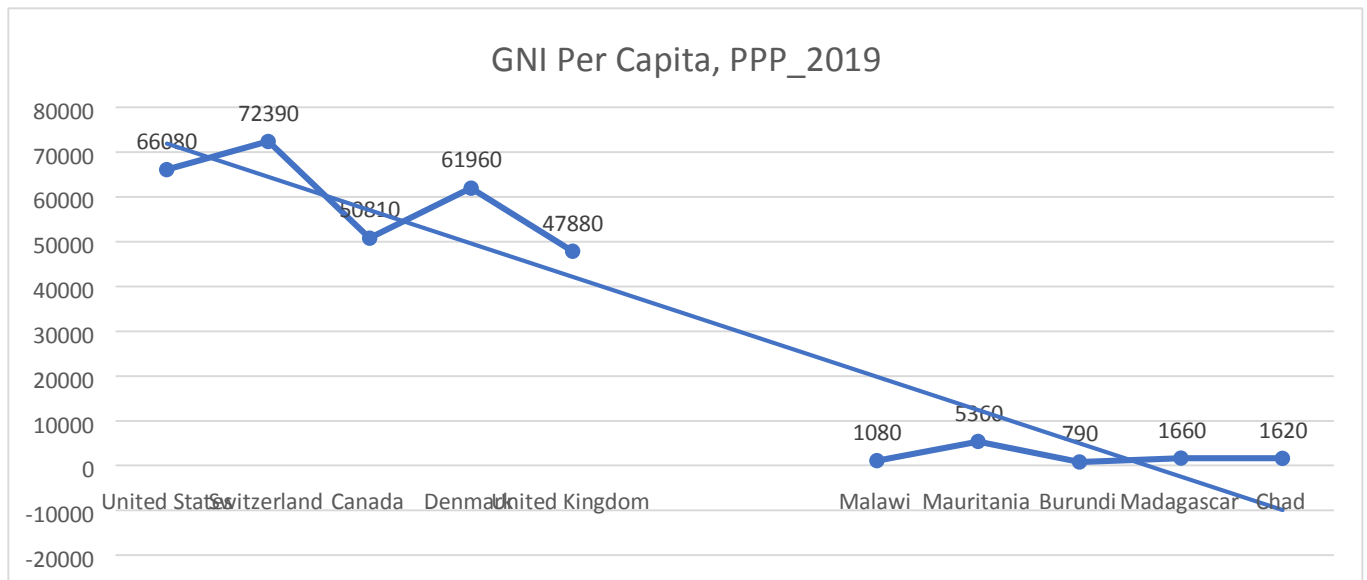


Figure 3 GNI Per Capita, PPP for the 5 Most & 5 Least Entrepreneur-Friendly Countries for 2019 (in US Dollars)

From Fig. 2 and Fig. 3 above, it is graphically noticeable that countries with lower GEI scores (i.e. less entrepreneur-friendly) do generally have significantly less GNI Per Capita, PPP (i.e. substantially less poverty levels) than their counterparts. This denotes an existence of a significant relationship between the GEI Scores (i.e. entrepreneurial ecosystem) and the GNI Per Capita, PPP (i.e. poverty mitigation levels) of all the countries in the world for the year 2019. These findings are in agreement with some earlier studies by different entities although the key study variables, units of analysis, research designs, time and geographical scopes of these earlier works differ from those of this study^{[4] [5] [7] [8]}. Therefore, the outcomes of the descriptive statistics generally warrant the rejection of the null hypothesis H_0 and instead confirm the study's supposition that, world over, entrepreneurial ecosystems significantly relate to and thus influence poverty mitigation.

3.2 Correlations

The relationship between the status of entrepreneurial ecosystems (measured as the GEI Scores) and levels of poverty mitigation (computed as the GNI Per Capita, PPP) for all the sampled countries was analyzed using a Pearson product-moment correlation coefficient. Initial analyses were conducted to ensure there is no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, positive correlation between the two variables [$r = .87$, $n = 134$, $p < .01$], with high levels of GEI Scores associated with high levels of GNI Per Capita, PPP.

The results got from this Pearson product-moment correlation are as shown in Table 2 below.

Table 2. Pearson Product-Moment Correlations Between the GEI Scores and GNI Per Capita, PPP of 178 Countries in 2019

	GNI Per Capita, PPP	GEI Scores
GNI Per Capita, PPP	1.000	
GEI Scores	.871**	1.000

** Correlation is significant at the 0.01 level (2-tailed); N= 134

Table 2. above illustrates that, entrepreneurial ecosystem (defined by the GEI Scores) is significantly correlated to poverty mitigation (indicated by the GNI Per Capita, PPP). These findings, with a $p < .01$, justify rejection of the study's null hypothesis H_0 which states that there is no significant relationship between the GEI Scores and the GNI Per Capita, PPP. This finding is essentially similar to the results of previous studies that were conducted by various authorities [4] [5] [6] [7] [8] though the concentration, approaches and premises (i.e. study variables, units of analysis, research designs, geographical and time scopes) of these previous studies are different from those of this study. Therefore, countries are bound to mitigate poverty (earn more GNI Per Capita, PPP) as they improve their respective entrepreneurial ecosystems.

3.3 Regressions

A simple linear regression was computed to predict the countries' GNI Per Capita, PPP based on their respective GEI Scores of all the countries sampled for this study by using the model stated below.

$$(1): y = \beta_0 + \beta_1 x + \varepsilon$$

Where: y = the GNI Per Capita, PPP; β_0 = is the y-intercept of the regression line; β_1 = the slope coefficient for the predictor variable; x = GEI Scores; and ε = the random disturbance effect.

The outcomes of the linear regression are as presented in Table 3 below.

Table 3. Regression Analysis Summary for GEI Scores Predicting GNI Per Capita, PPP

Variable	B	95%CI	β	t	p
(Constant)	-9244.37	[-12960.16, -5528.58]		-4.92	0.000
GEI Score	982.26	[886.94, 1077.59]	0.87	20.38	0.000

$R^2 = 0.76$
 $R^2_{\text{adjusted}} = 0.76$
 Number of observations = 134

Note: CI = Confidence Interval for B

A significant regression equation was found ($F(1,132) = 415.494, p < .000$) with an R^2 of .759. As illustrated in Table 3, the countries' predicted GNI Per Capita, PPP is equal to $9244.367 + 982.263(\text{Entrepreneurial ecosystem status})$ GNI Per Capita, PPP when entrepreneurial ecosystem status is measured in GEI Scores. Countries' GNI Per Capita, PPP increased by 982.263 for each GEI Score of the entrepreneurial ecosystem status. The $p < .000$ implies that results to be

interpreted there from are dependable. Thus, GEI score predicts GNI Per Capita, PPP fairly well in the study sample. Hence, the results from the regression analysis shows that there is a significant association between the GEI Scores and the Per Capita GNI (PPP). With a with a $p < 0.05$, it means the null hypothesis H_0 and of the study is rejected. These findings are generally similar to the results of earlier studies ^{[5] [6] [7] [8][9]} although these previous studies were premised on different sets of research variables and designs, units of analysis, time and geographical scopes. In brief, the results from the regression analysis generally essentially show that there a significant relationship between the entrepreneurial ecosystem (i.e. GEI Scores) and the levels poverty mitigation (i.e. GNI Per Capita, PPP) of all the sampled countries for the year 2019.

IV. Conclusions, Lessons and Recommendations

4.1. Conclusion and Lessons

The findings presented in section 3.0 above largely show that there are significant empirical relationships, correlation and association between the appropriateness of the entrepreneurial ecosystem (assessed as GEI scores) and the poverty mitigation levels (quantified as GNI Per Capita, PPP) of every country in the world. The more favorable a country's entrepreneurial ecosystem (i.e. higher GEI scores) is, the lower the poverty levels (higher GNI Per Capita, PPP) of such a country is likely to be. Therefore, all the null hypothesis of the study is rejected. A comparative analysis of empirical data of 134 countries for the year 2019 generally shows that countries with higher GEI scores (i.e. more friendly/favorable entrepreneurial ecosystems), correspondingly have higher GNI Per Capita, PPP (i.e. higher levels of poverty mitigation) than their counterparts. Thus, any country is very likely to reduce its poverty levels (i.e. get more GNI Per Capita, PPP) if and/or when it improves the appropriateness of its entrepreneurial ecosystem (i.e. attains higher GEI Scores). In other words, a country can mitigate poverty through improving its internal business environment to be more friendly, favorable and appropriate for the establishment and prosperity of entrepreneurs.

4.2 Recommendations and Lessons

According to the outcomes and conclusions of the study, we recommend that all countries, and especially the poor economies with unfavorable entrepreneurial conditions, deliberately, diligently and ardently improve their respective entrepreneurial environments to favor and facilitate entrepreneurship growth as a strategy for mitigating poverty. The specific and practical measures recommendable for improving the entrepreneurial ecosystems include each country's commitment to set up viable policies and facilitation for the establishment and sustenance of:- serenity & tranquility; markets; skilled labor markets; access to appropriate technology; functional infrastructure; specialized technical advice and support; access to ample finance; business premises and inputs; and a supportive regulatory frameworks that favor, stimulate and expedite the growth and prosperity of entrepreneurs. To attain such a favorable entrepreneurial ecosystem, countries should relentlessly strive facilitate the establishment and sustenance of appropriate market structures, basic infrastructure, Research and Development systems, financial sector, corporate sector, government and education systems that buttress the necessary attitudes, abilities and aspirations for the growths and prosperity of entrepreneurships.

Further recommendations for improving the entrepreneurial ecosystems as a strategy for mitigating poverty in every country include national commitment to establish, facilitate and sustain the following practices and/or factors as fundamentals constituting a conducive entrepreneurial environment:

- *Opportunity Perception.* This entails empowering and enabling citizens to easily and adeptly identify and exploit entrepreneurial opportunities as they arise.
- *Start-up Skills.* This calls for equipping potential entrepreneurs with the necessary business start-up skills through formal and informal training.
- *Risk Acceptance.* To achieve this, Governments should prove supportive of entrepreneurship in various ways that include financial gearing and establishment of insurance policies and disaster recovery schemes that bolster continuity of local enterprises irrespective of existing challenges.
- *Networking.* This refers to empowering entrepreneurs to combine their personal knowledge with their ability to connect to others in a country and the whole world. This entails measures to ensure development of urbanization of the country and the quality of the transport infrastructure
- *Cultural Support for entrepreneurships.* This entails social-cultural appeal to and encouragement of all, and especially the best and brightest, to be responsible entrepreneurs. Thus, countries should eliminate the levels of corruption that can undermine the high status and steady career paths of legitimate entrepreneurs.
- *Opportunity Start-up.* This requires governments to maximize start-ups by people who are motivated by opportunity through improving government service quality, observing good governance principles, and minimizing such regulatory challenges as posed by red tape and tax payment.
- *Technology Absorption.* Countries should facilitate the diffusion of new technology, especially Information and computer technology, and the capability to absorb it as these are vital for innovative firms with high growth potential.
- *Human Capital.* Countries should ensure prevalence of high-quality human capital, which is vitally for ventures that are highly innovative and require an educated, experienced, and healthy workforce to continue to grow. Governments should provide entrepreneurs with higher education degrees that can make them more capable and willing to start and manage high-growth businesses.
- *Competition.* Each country should establish healthy and functional competitive environments to facilitate the growth of good entrepreneurships. This can be achieved through coming up with appropriate regulations such anti-monopoly regulation.
- *Product Innovation.* Every country should facilitate technology transfers that ensure that her business environment allows the application of innovations for developing new products.
- *Process Innovation.* Each country should ensure that most entrepreneurial businesses do not just apply new technology but they also create it. Thus, governments should establish appropriate research and development (R&D) potential with physical scientific infrastructure and science oriented human capital.
- *High Growth.* Every country should ensure that there is a substantial percentage of high-growth businesses that intend to employ at least 10 people and plan to grow more than 50 percent in five years with business strategy sophistication and venture capital financing possibility (Venture Capital). High Growth combines high growth potential with a sophisticated strategy and growth specific venture capital finance.
- *Internationalization.* Every country should strive to maximize the degree to which her entrepreneurs are internationalized, as measured by the exporting potential of businesses, controlling for the extent to which it (the country) is able to produce complex products.
- *Risk Capital.* Each country should ensure the availability of risk finance, particularly equity rather than debt, which is an essential precondition for fulfilling entrepreneurial aspirations

that are beyond an individual entrepreneur's personal financial resources. This requires establishing a considerable size and liquidity of the stock market, level of IPO, Mergers & Acquisitions, and debt and credit market activity, which include several aspects of a country's debt and capital market.

Other recommendations for bolstering the entrepreneurial ecosystems as a measure for mitigating poverty include each country's commitment to establish, facilitate an uphold the following:

- Business development services for budding enterprises that offer such benefits as training, skilling, capacity-building, empowerment, and technical support to the emerging businesses of the economy.
- National trade shows, symposia and trade expos that focus on promoting and developing embryonic entrepreneurships in the economy through organized marketing and exposures to crucial information;
- Mergers, collaborations, networks and partnerships between indigenous blossoming entrepreneurships and foreign direct investors that can enable the local embryonic enterprises to boost their capacities, acquire new skills and operate better;
- Tax-based incentives such as tax exemptions and holidays for budding and extra-ordinary or extraordinarily essential entrepreneurships.
- Budding entrepreneurships' cooperatives, associations and strategic alliances that eliminate dysfunctional and/or unhealthy competition among emerging businesses but engender synergetic benefits for nascent entrepreneurs such as collective bargaining, marketing, logistics and bulk procurement;
- Good corporate governance and professional management of blossoming entrepreneurships
- Ample governmental procurements from & trading with local and/or indigenous entrepreneurships.
- Encouragement of each country's citizens to prefer trading (buying from, selling to, and or dealing) with their respective indigenous entrepreneurships.
- Special governmental ministries, departments and agencies such as commercial courts, registries, finance and economic planning and development departments, and marketing agencies among other governmental entities for facilitating particularly the management and growth of entrepreneurships.
- Easy access to and utilization of interest-free finances and/ or credit facilities such as Islamic financing systems.

4.3 Limitations of the Study and Recommendations for further research

The study was limited to a cross-sectional research that focuses on only the year 2019 yet there are alternatives of using time series/ longitudinal approaches. Also the paper is limited to a quantitative methodology while there are options of using qualitative and/or mixed approaches. The study is similarly limited in the study variables to analyze the relationship between GEI scores and GNI Per Capita, PPP as the only indicators of entrepreneurial ecosystem and poverty while there are other indicators/variables that may be analyzed. Hence, in order to substantiate, expand, probe, buttress, endorse, validate, contest and/or corroborate this study, subsequent researchers may:

- Widen, narrow or change the geographical scope and units of analysis of the research and use different research designs and investigative methodologies such as case-studies.
- Utilize various time scopes and approaches such as longitudinal (time series/panel data) analyses, and qualitative or mixed/triangulated approaches.

- Study relationships between and/or among other variables and sub-variables of entrepreneurial ecosystem & poverty mitigation;

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