

The Role of Innovative Entrepreneurship in the Economic Development: An Empirical Analysis of G20 Countries

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Introduction

Now-a-days, the world is facing so many challenges which include environmental challenges like disruption caused by man-made green house gas emission, societal challenges like income disparity, social injustice, political challenges, technological challenges, economical challenges etc. But it depends upon the organization itself, how it responds to such challenges. Some organizations fail to accept the challenges and as a result get affected negatively by deteriorating environmental conditions, economic conditions and social conditions. There are also some other organizations, those who find opportunities from these challenges. They accept the challenges and work in a positive way for the betterment of the society and for the economy as well. Such business organizations are called as sustainable business. Sustainable business can help to address the problem of the society and the economy while working for profitable opportunities for business.

Sustainable business always adopts the changing business practices to in order to adjust him with the changing business environment. They focus on the creation of new products or processes in order to meet the changing customers' needs. The successful implementation of sustainable business practices depends upon the Entrepreneurship and Innovation.

Entrepreneurship and innovations play the pivotal role for the success of new business as well as established business. This is also applied to multinational companies for the growth and development of the economy.

The present paper is based on identifying the role of innovative entrepreneurship in the economic development of G20 member countries. G20 countries include 19 individual countries and the European Union. The 19 countries

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are Argentina, Australia, Brazil, Canada, China, Germany, France, India, Indonesia, Italy, Japan, Mexico, Russian Federation, Saudi Arabia, South Africa, South Korea, Turkey, UK and US. G20 is the premier forum for international cooperation. It brings together the leaders from both developed and developing countries to discuss financial and socio-economic issues.

Meaning of Entrepreneurship

Entrepreneurship is the process of assembling all the factors of production i.e. men, material, money, machines and methods in an efficient manner and entrepreneur is the person who utilize these resources to create a new product or to produce an existing. Entrepreneurship is a process which always tries to do the new things in an innovative and better way.

The meaning of entrepreneurship according to the French seventeenth-century is “someone who undertakes and more specifically someone who undertakes a specific project or activity.”

According to the French economist Jean Baptiste, in the nineteenth century, “entrepreneurship is the individuals who create value by shifting resources from lower to higher valued activities. The higher value activities can be activities that bring value to both individuals and society.”

In twentieth century, Joseph Schumpeter defined, “entrepreneurs are innovators who drive the creative destruction process, reforming or revolutionizing the pattern of production. In many respects, sustainable businesses are significantly changing, if not revolutionizing, the patterns of production and service delivery, transforming business practices in ways that benefit the environment and society.”

In the twenty first century, Peter F. Drucker suggested that, “entrepreneurs always search for change, respond to it and exploit it as an opportunity. Entrepreneurs take risk in starting new activities and take on significant personal responsibility. Many sustainability entrepreneurs perceive opportunities emanating from increased public concern about the environment and climate disruption and are responding to this opportunity with profit making ventures that address these concerns.”

From the above perspectives, entrepreneurship can be termed as:

- Recognizing change
- Grabbing the opportunities
- Innovating
- Taking risk and responsibility
- Making optimum utilization of resources
- Satisfying customers by creating new value

Meaning of Innovation

Innovation means introduction of something new. Without innovation, nothing new is possible and there will be no progress without doing anything new. Innovation is the process of bringing the new and creative ideas into reality. It is the creation of new value to the products, processes, marketing, or organizations as well. Without innovation the enterprise cannot grow and survive in the competitive market. In order to survive in the global market and to face the global competition, the entrepreneurship should be an innovative one. Innovation is necessary to create distinct product, strong brand, and to build wide customer network. It doesn't always mean to create something new. It can also mean to add something new to the existing products or processes, change it, and make it better for the customers. Innovation is often required while responding to an opportunity. For example, a new way to solve a problem, address a concern that is cheaper, faster, or better than the old way of doing this. Therefore innovation is an important tool for the entrepreneur which helps in exploiting the business opportunities.

Forms of Innovation

There are different ways in which a business can innovate. These are, product innovation, process innovation, marketing innovation and organizational innovation.

- **Product Innovation:** This type of innovation is related to either the production of new product or adding a new feature in the existing product or enhancement of features of existing products. Product innovation is mostly used in case of technological items, software etc.
- **Process Innovation:** This type of innovation is related to how a product or service is produced or delivered. It may be the combination of methods, technologies to produce, market or deliver the product or provide a service.
- **Marketing Innovation:** This type of innovation is related to introduction of new marketing methods such as changes in product design, packaging, product branding, labeling, product pricing, and promotion.
- **Organizational Innovation:** This type of innovation is related to the implementation of a new organizational method in organization's business practices, workplace organization, or external relations.

Innovation and Entrepreneurship in the Economic Development

The general health of a country can be measured by looking at its economic growth and development. The economic growth of a country is usually indicated by the increase in its gross domestic product (GDP). GDP is the total monetary value of goods and services produced by the country during a specific period of time. Innovation and entrepreneurship are taken as the one of the major determinants of economic development in the present scenario. The innovative economies are more productive, more resilient, and more adaptable to change and better able to support higher standard of living. Thus it is an important factor of economic growth and

development (OECD 2015). Waasdorp P (2002), (Dahlstrand & Stevenson, 2010) differentiate innovative entrepreneurship from ordinary entrepreneurship. According to them, these two types of entrepreneurship may give different results in different outcomes. Ordinary entrepreneurship mainly contributes to the job creation and innovative entrepreneurship creates higher value-added jobs, wealth creation, and firms with higher growth rates which are likely to be more effective.

Review of Literature

Schumpeter (1934), wrote in his book as “entrepreneur as innovator” and considered as an essential driver of competitiveness and economic dynamics. He also narrated innovation is a process of industrial mutation; that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one.

UNICE, Fostering Entrepreneurship in Europe; the UNICE Benchmarking Report 1999 Brussels, p.6 (1999), Entrepreneurs are the change agents. The performance of economy largely depends upon the ability of entrepreneurs to respond to new changes.

Wennekers and Thurik (1999), Audretsch and Thurik (2001), found in their research that entrepreneurship is the micro driver of innovation and economic growth.

Poh Kam Wong Yuen Ping Ho Erkkö Autio (2005), studied on the impact of technological innovation on the economic growth and new firm formation revealed that innovation is positively related with GDP growth rate.

Kevin Hindle (2009), argued that innovation is the combination of invention process and entrepreneurial process to create new economic value for the stakeholders and suggested that innovation is one but involves two distinct process, invention and entrepreneurship which is the result of three activities: opportunity evaluation, psychological commitment and implementation management.

Ahmed Shakir Al-Askari (2011), made a research on the impact of marketing innovation on entrepreneurship and revealed that marketing innovation positively affects the growth of entrepreneurship as well as the growth of economy.

Szabo K. Zsuzsanna, Emilia Hermana (2012), aimed at analyzing the impact of innovation and entrepreneurship on the economic development of EU member countries and opined that innovative entrepreneurship is quite essential for the sustainable development of business as well as the growth of the economy. They also highlighted that the disparity in innovative entrepreneurship is the main cause of gaps in the economic development.

Jean-Michel Sahut and Marta Peris-Ortiz (2012), made a study on the relationship between small business, innovation and entrepreneurship and concluded that small business provides conducive environment for the entrepreneurship and innovation is required for its sustainability.

Hamid Tohidi, Mohammad Mehdi Jabbari (2012), studied the role of innovation in the growth, survival, and success of an organization and concluded that innovation is one of most complex issues organizations facing today and every organization should follow the innovation process for their growth and development

R. Ranga Babu, M. Murali Krishna, A. Swathi (2013) examined the role of creativity and innovation in entrepreneurship and found that accelerating entrepreneurship and business creation are vital for employment generation and innovation and growth of entrepreneurship are positively related to each other.

Adam Szirmai, Wim Naudé, and Micheline Goedhuys (2013), made a study on the overview of entrepreneurship, innovation, and economic development and found that innovation and entrepreneurship can contribute to the economic development by reallocating the resources from less to more productive uses.

Charlie Karlsson, Urban Grasjo & Sofia Wixe (2014), made a research on innovation and entrepreneurship in the global economy and revealed that innovation and entrepreneurship are the major players for the growth and development of global economy.

Andreas Kuckertz, Elisabeth S. C. Berger and Martin P. Allmendinger (2015), studied the determinants of entrepreneurship in the innovation driven economies and found that the innovative economies are growth economies as compared to the economies not adopting innovations.

Fang Zhao (2015), made a study on the synergy between entrepreneurship and innovation and found that entrepreneurship and innovation are positively related to each other and complementary to each other and also suggested the combination of two is more vital for the success of an organization in today's competitive and changing business environment.

Jamal Elbaz, Mohammed Binkour, Ilias Majdouline (2015), studied empirically on innovation and entrepreneurship of Moroccan Firms and found that entrepreneurship and innovations are related to each other positively and play a vital role in the success of an organization in the ever changing business environment.

Hajam Abid Bashir, Ali Akhtar (2016), made a study on The Role of Innovative Entrepreneurship in Economic Development and found that there is a positive relationship between innovation, entrepreneurship, and economic growth.

Objectives of the Study

- To explore the relationship between innovative entrepreneurship and economic growth.
- To study the role of innovative entrepreneurship in the economic development of G20 member countries.

Hypothesis of the Study

S.No.	Null Hypothesis
1.	There is no significant difference between the National Competitiveness and GDP per Capita of G20 countries.
2.	There is no significant difference between the Necessity Driven Entrepreneurship and GDP per Capita of G20 countries.
3.	There is no significant difference between the Opportunity Driven Entrepreneurship and GDP per Capita of G20 countries.
4.	There is no significant difference between the Innovative Performance and GDP per Capita of G20 countries.
5.	There is no significant difference between the product innovation and GDP per Capita of G20 countries.
6.	There is no significant difference between the process innovation and GDP per Capita of G20 countries.
7.	There is no significant difference between the organizational innovation and GDP per Capita of G20 countries.
8.	There is no significant difference between the marketing innovation and GDP per Capita of G20 countries.

Research Methodology

The study is purely based on secondary data collected from the Annual Reports of Global Economic Monitor (GEM), Global Innovation Index (GII), Global Competitiveness Report (GCR), World Economic Forum (WEF), and UNESCO Institute for Statistics for the year 2019. For the purpose of data analysis, Karl Pearson's Coefficient of Correlation is used to measure the relationship between

- National Competitiveness and GDP,
- Necessity Driven and Opportunity Driven Entrepreneurship as a percentage of Total Entrepreneurial Activity (TEA) and GDP
- Innovative Performance and GDP, and
- Innovative Entrepreneurship as a percentage of SMEs introducing product innovation, process innovation, organizational innovation and marketing innovation and GDP of G20 member countries.

Results Analysis and Discussions

The present study highlights the effect of entrepreneurship and innovation on economic development which differs according to the development stages of a country. According to (Porter et al., 2002), there are three stages of development such as factor-driven stage, efficiency-driven stage and innovation driven stage. Global Competitiveness Report 2015-16 and World Economic Forum-2015 state that, only one country i.e. India is at Stage-I as factor driven, one country is in transition from Stage-I to Stage II i.e. Saudi Arabia, three countries are in efficiency driven economies i.e. Indonesia, China and South Africa, five countries are in transition from Stage-I to Stage-II i.e. Russia, Turkey, Argentina, Brazil and Mexico and the rest of the countries are innovation driven economies.

Testing of Hypothesis

Hypothesis 1: National Competitiveness and GDP per Capita

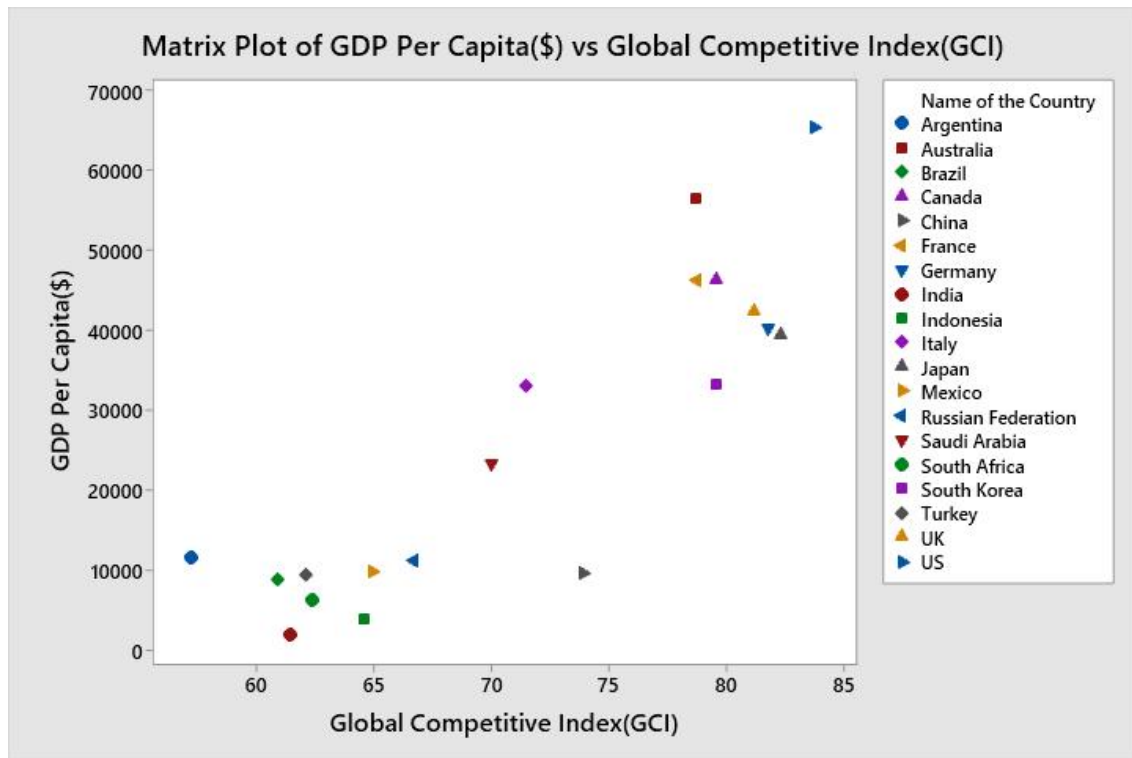
Correlations

	Global Competitive Index(GCI)
GDP Per Capita(\$)	0.881

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Global Competitive Index(GCI)	0.881	(0.712, 0.954)	0.000

Figure 1



Source: Self Compiled based on own calculation based on own calculation

From the above table it is found that the p value is 0.000 which is less than the significance level 0.05. That means the null hypothesis is rejected which shows that there is a significant difference between the national competitiveness and economic development of G20 countries. Alternatively we can say that there is a high degree of positive correlation between the national competitiveness and economic development (GDP per capita) of G20 countries as Pearson’s Coefficient of Correlation (r) is 0.881.

Hypothesis 2: Necessity Driven Entrepreneurship and GDP per Capita

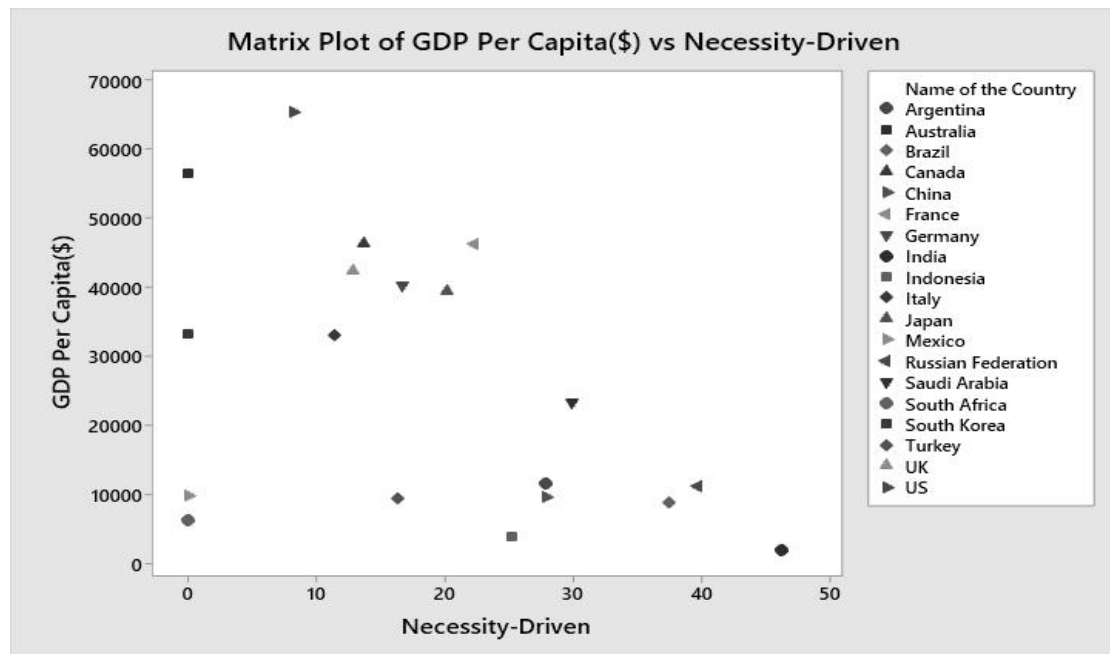
Correlations

	Necessity-Driven
GDP Per Capita(\$)	-0.470

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Necessity-Driven	-0.470	(-0.762, -0.020)	0.042

Figure 2



Source: Self Compiled based on own calculation based on own calculation

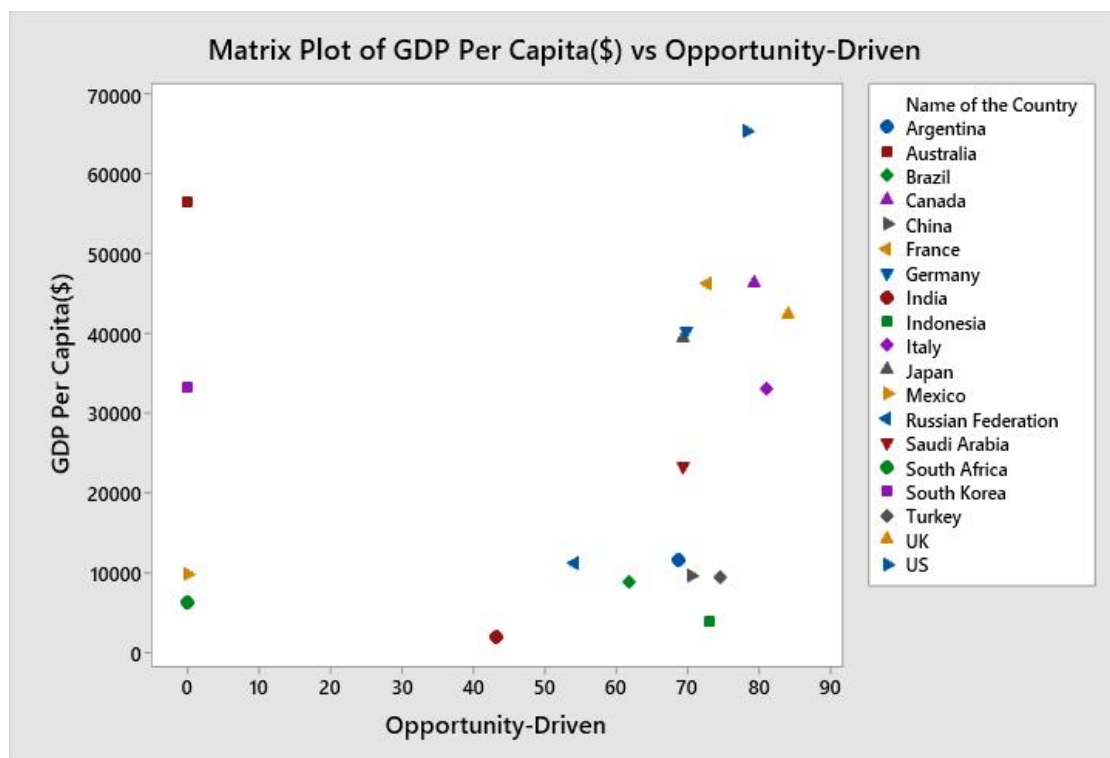
The above table shows that there is negative correlation between the Necessity Driven Entrepreneurship and the economic development (GDP per capita) of G20 countries as Pearson’s Coefficient of Correlation (r) is -0.470. It shows that when the people have no other source of income, they go for fulfilling their necessity by entering into the entrepreneurship business. They are known as necessity driven entrepreneurs. From the above table it is also found that p value is 0.042 which is less than the significance level 0.05. Hence, the null hypothesis is rejected and which states that there is a significant difference between necessity driven entrepreneurship and GDP per capita of G20 countries. It means the necessity driven entrepreneurship negatively affects the economic development of G20 countries.

Hypothesis 3: Opportunity Driven Entrepreneurship and GDP per Capita Correlations

Opportunity-Driven	
GDP Per Capita(\$)	0.156

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Opportunity-Driven	0.156	(-0.321, 0.570)	0.524

Figure 3



Source: Self Compiled based on own calculation based on own calculation

From the above table it is revealed that, there is a low degree of positive correlation between opportunity driven entrepreneurship and economic development (GDP per capita) of G20 countries as the calculated correlation (r) is 0.156. These entrepreneurs are driven by opportunities rather not finding the work. However during the year 2019, opportunity driven entrepreneurs have not contributed much towards the development of the economy as correlation is very low and p value is 0.524 which is much more than the significance level 0.05. So the null hypothesis is accepted.

Hypothesis 4: Innovative Performance and GDP per Capita

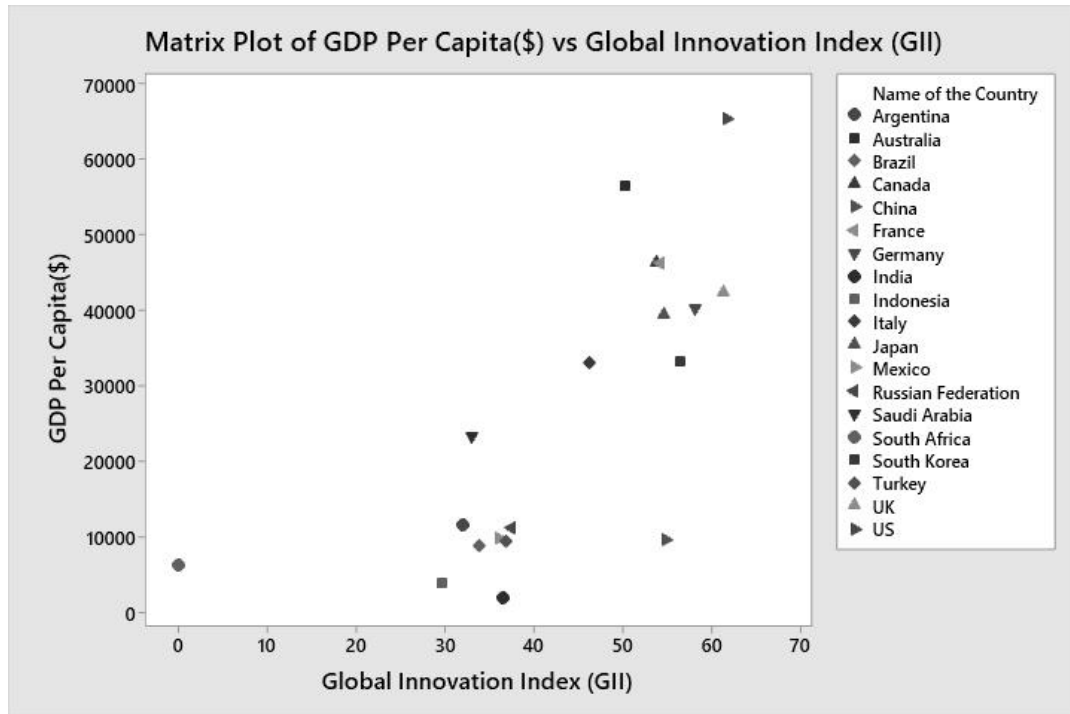
Correlations

	Global Innovation Index (GII)
GDP Per Capita(\$)	0.727

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Global Innovation Index (GII)	0.727	(0.407, 0.888)	0.000

Figure 4



Source: Self Compiled based on own calculation based on own calculation

The above table depicts that there is a high degree of correlation between innovative performance and economic development of G20 nations as Pearson’s correlation is 0.727. Innovative performance is measured by Global Innovation Index (GII). From the table, it is also concluded that null hypothesis is rejected because the p value is 0.00 which is less than the significance level 0.05. It means there is a significant relationship between Innovative performance and economic development of G20 countries. Therefore the gaps between the economic developments of G20 countries can be measured by the variations in the innovative performance of these countries.

Hypothesis 5: Product innovation and GDP per Capita

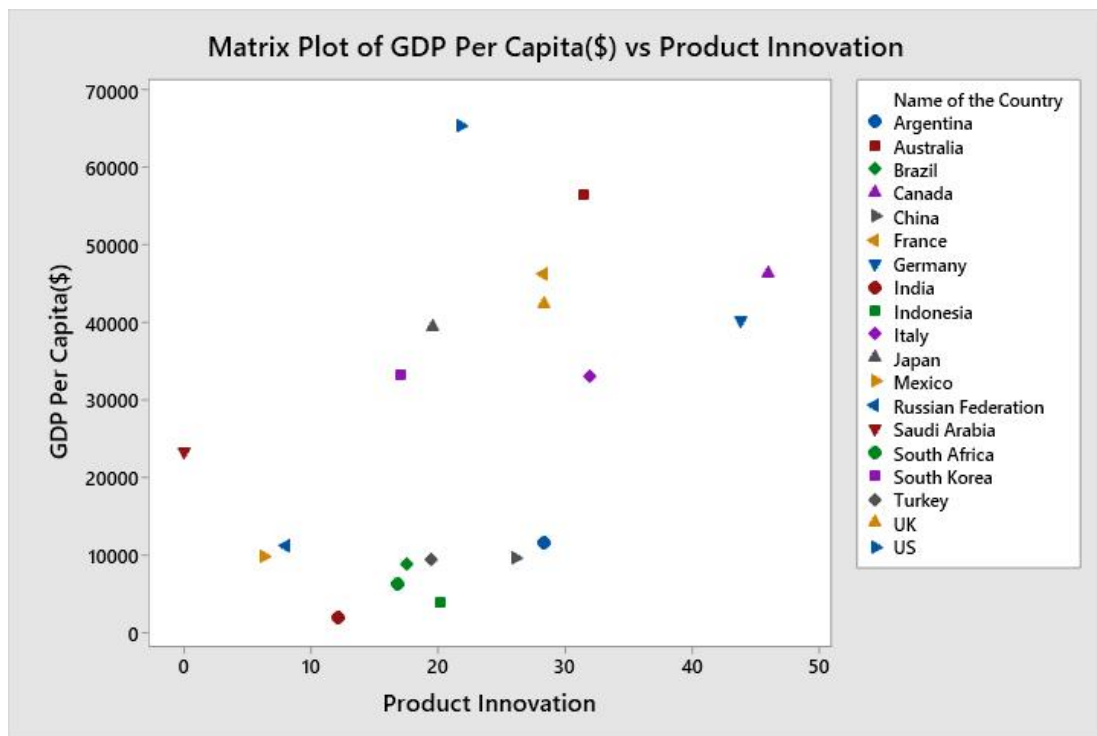
Correlations

	Product Innovation
GDP Per Capita(\$)	0.518

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Product Innovation	0.518	(0.084, 0.787)	0.023

Figure 5



Source: Self Compiled based on own calculation based on own calculation

The above table shows that there is a positive degree of correlation between economic development (GDP per capita) and SMEs introducing product innovation as % of SMEs in manufacturing, because the Pearson’s coefficient of correlation (r) is 0.518. From the result shown above, it is also found that the p value is 0.023 which is less than the significance level 0.05. It means the null hypothesis is rejected which states that there is a significant relationship between the product innovation made by the SMEs and the economic development. The countries those who introduce innovation of new products or services, contribute largely towards the economic development.

Hypothesis 6: Process innovation and GDP per Capita

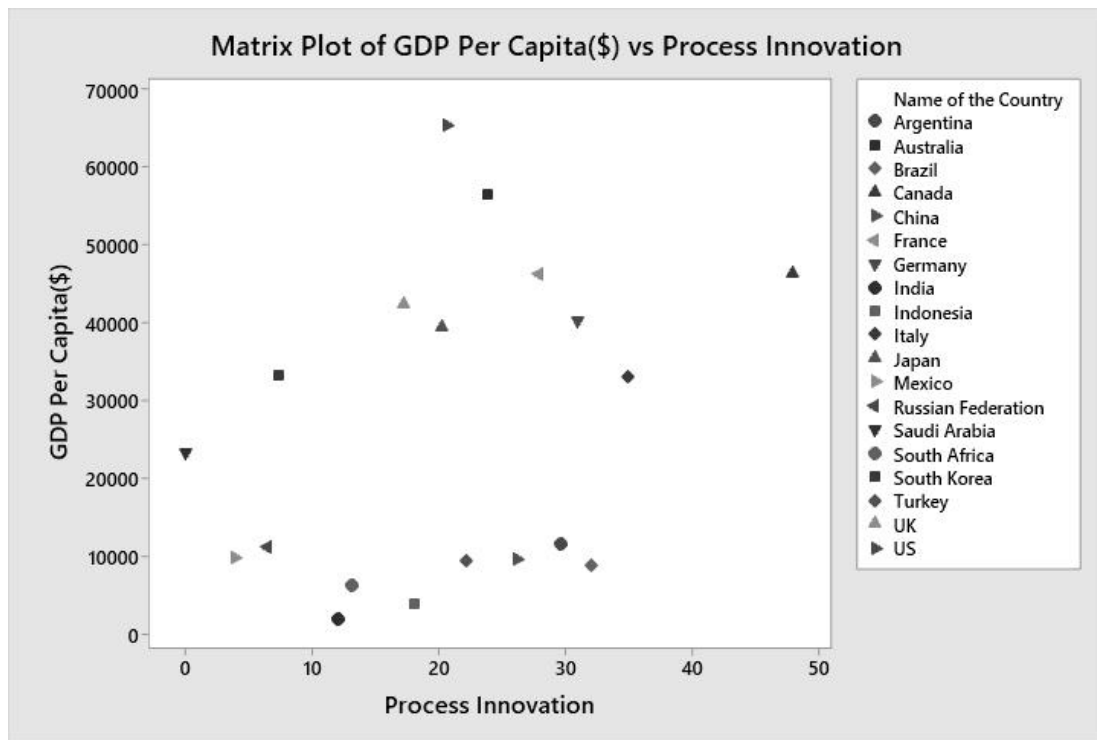
Correlations

	Process Innovation
GDP Per Capita(\$)	0.327

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Process Innovation	0.327	(-0.150, 0.680)	0.172

Figure 6



From the above table, it is obvious that there is low degree of positive correlation between the process innovation as % of SMEs in manufacturing and economic development measured in terms of GDP per capita of G20 nations as Pearson’s coefficient of correlation is 0.327. However, the null hypothesis is accepted as p value is more than the significance level. It means the process innovation introduced by SMEs of G20 member countries contributes very less towards the economic development.

Hypothesis 7: Organizational innovation and GDP per Capita

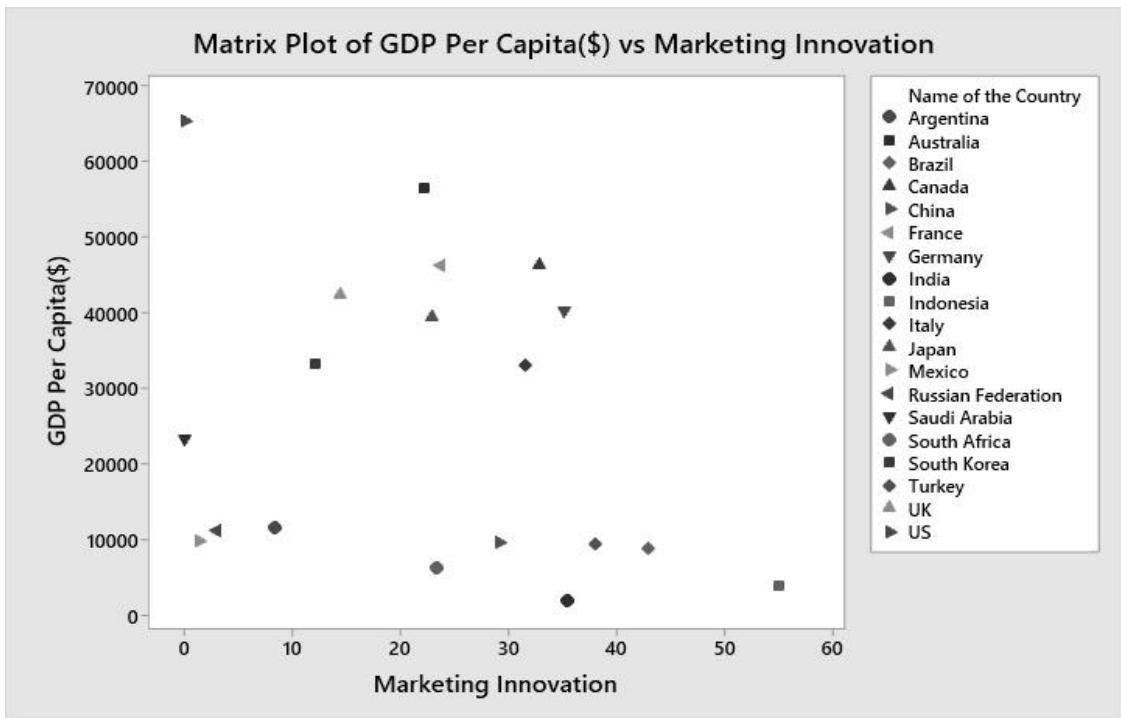
Correlations

	Marketing Innovation
GDP Per Capita(\$)	-0.265

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Marketing Innovation	-0.265	(-0.642, 0.215)	0.274

Figure 7



Source: Self Compiled based on own calculation based on own calculation

The above table reveals that, there is a negative correlation between the marketing innovation introduced by SMEs and economic development as Parson’s correlation is -0.265. The table also depicts that the null hypothesis is accepted as p value is 0.274 which is more than the significance level 0.05. It means there is no significant difference between the marketing innovation and economic development of G20 countries. It is because of the fact that the countries having higher marketing innovation as a % of SMEs in manufacturing have lower GDP per capita.

Hypothesis 8: Marketing innovation and GDP per Capita

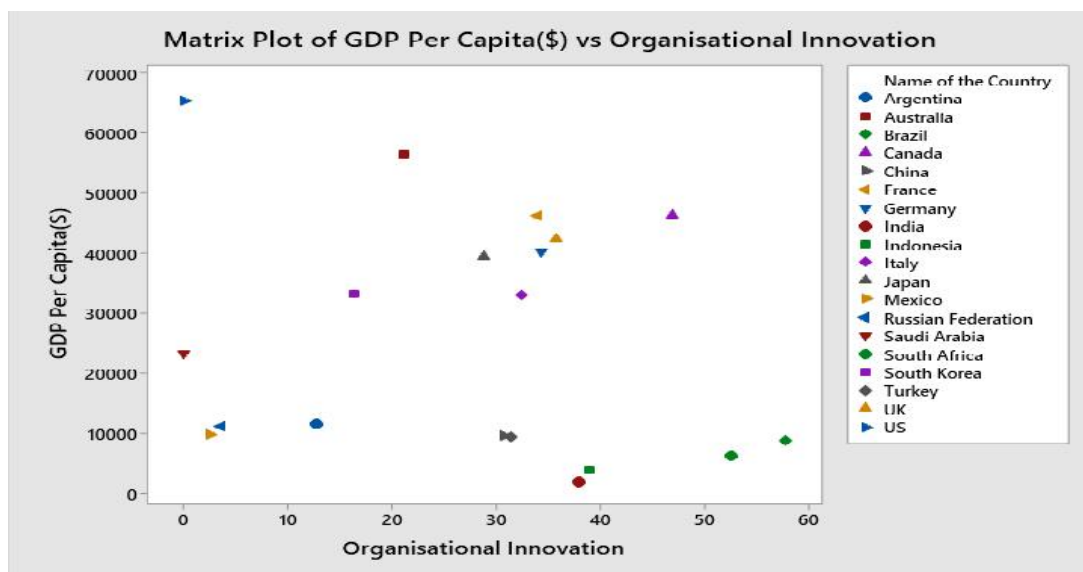
Correlations

	Organisational Innovation
GDP Per Capita(\$)	-0.184

Pairwise Pearson Correlations

Sample 1	Sample 2	Correlation	95% CI for ρ	P-Value
GDP Per Capita(\$)	Organisational Innovation	-0.184	(-0.589, 0.295)	0.452

Figure 8



Source: Self Compiled based on own calculation based on own calculation

From the above table it is concluded that, the organizational innovation is negatively correlated with the economic development as the correlation is -0.184. The null hypothesis is also accepted because the p value is more than the significance level of 0.05. It state that there is no significant difference between the organization innovation as a % of SMEs in manufacturing and GDP per capita of G20 countries.

Conclusion

From the above discussion, it is concluded that the entrepreneurship and innovation is required to be successful in sustainable business practices. In this paper, we have discussed that the relationship between entrepreneurship, innovation and economic development of G20 member countries. The result shows that there is a positive impact of innovation on economic development. There is also a negative correlation because of the fact that some countries are lagging behind the average innovative entrepreneurship of G20 countries. The motives of the entrepreneur i.e. for

which they are doing the business also affect the economic development. The necessity driven entrepreneurs contribute less towards the economic development as compared to the opportunity driven entrepreneurs. Now-a-days SMEs are considered as the backbone of the economic growth and development. The countries having SMEs introducing innovation in entrepreneurship contribute more towards the economic development. In order to increase the economic growth through the entrepreneurship should be innovative one. Government should focus on promoting more and more entrepreneurship. Plans and policies are required to be made to increase the innovative activities among the existing firms.

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