IMPACTS OF CORRUPTION ON INNOVATION AND WELL-BEING ON COUNTRIES REPRESENTED IN THE ICIM BY OECD MEMBERS

Impactos de corrupção na inovação e bem-estar em países representados no ICIM por membros da OCDE

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Abstract:

Corruption is a treat to well-being, as showed in this article. The study compares statistically the OECD member states and cross check with the countries where the universities that contribute to the ICIM (International Conference on Innovation and Management) are located. A statistically analyses of 39 countries using 13 selected indicators, some from the UNSDGs and others from the Observatory ORIBER², was applied seeking areas of the ICIM Proceedings that may be developing and deepening their research in order to contribute for a better global future.

Keywords: Corruption. Well-being. Cooperation

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RESUMO

A corrupção é um deleite para o bem-estar, como mostrado neste artigo. O estudo compara estatisticamente os estados membros da OCDE e cruza com os países onde estão localizadas as universidades que contribuem para o ICIM (Conferência Internacional sobre Inovação e Gestão). Uma análise estatística de 39 países, utilizando 13 indicadores selecionados, alguns dos UNSDGs e outros do Observatório ORIBER2, foi aplicada em busca de áreas dos procedimentos do ICIM que podem estar desenvolvendo e aprofundando suas pesquisas, a fim de contribuir para um futuro global melhor.


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INTRODUCTION

We are now living at an Age where things are becoming more instable, and where geopolitical problems increase threats in many areas, particularly concerning inappropriate use of accelerated technological breakthroughs, so timing for actions are becoming shorter and shorter, and Trust has being imploding (Trust barometer, 2017)\(^3\). An example of this, are the everyday more common cyberattacks, as the one related to the Trump and Putin hidden alliances; as well as the problems related to climate change and ecosystem biodiversity, as the is the case of the 17% of Amazon Forest lost in the last 50 yrs. Fortunately, nowadays, it may be possible in this case to use drones to monitor the process as suggested by the WWF\(^4\), and start thinking on Sustainable Recovery Goals (SRGs). Considering 132 Countries that includes the ones we are interested one could see that Controlling Corruption may help to improve Innovation Conditions (Fig 1), something that reinforces the importance of the Worldwide Governance Indicators (WGI), World Bank (2017)\(^5\).

![Figure 1: Global Innovation Index (GII) vs. Non-Corruption Perception Index (NCPI) Normalized (0 - 100), and the Higher the Better](source: Prepared by authors)

Moreover, a higher concern, particularly in this Digital Age, is the Increasing Concentration of (Wealth Stirati, 2016) and the Inequality Growing again; as indicated by the recent World Inequality Report (WIR, 2018). This is important since it may impact Innovation Development as may be seen in Fig 2.

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What is most interesting to observe in this graph is the accelerated growth in Innovation starting at about 50 in the GINI Index, which is de case of Developing countries like Brazil and Colombia. What may be needed is new Economic Policy Framework that may foster a more Inclusive Development as recommended by the WEF.

Actually, It’s possible to analyse corruption from many points of view, as pointed by (Brei, 1996) with this topic usually focus on: Market, public interest, public opinion or even on regulation. In a wide form it is related to the violation of the moral, or the quest for advantage in disregard with the common well-being or others private life (Rogow&Lasswell, 1970). Corruption taint in many spheres of our daily lives, such as ethics, morals, business, relations to the law, corporates, governments and politics, that’s why when unfolded any corruption, it generally causes an uproar trough the society. One of the thinking leaders on the area of Corruption and Culture is Richard Sennett from The London School of Economics who wrote the classical The Corrosion of Character where he already foresees that a regime "which provides human beings no deep reasons to care about one another cannot long preserve its legitimacy".

Corruption is deeply related to how it is perceived in its society, and as any social value, it changes geographically and chronologically, as the people that make up the society change and redefines what is acceptable or not. As (Granovetter, 2006) pointed the corruption concept emerges from the society, and its understanding should be not compared lightly trough communities. As a good example of how some countries with the same culture basis could approach differently was a paper presented in last year ICIM, Yunanda, Tareq, (Mahdzir, & Rahman, 2017, p. 1422), in this short paper it’s show how the Islamic Banks interprets its social impact and how they disclose information following the Shariah.

Is noted by (David, 1986, pp. 19-34) that the laws and definitions, as the source of Power that drives the order in society is very complicated, and thus, when comparing the same aspect of a society it should be done by understanding the context and history of that aspect and how it is perceived in its society. As (Granovetter, 2006) described the corruption common understanding is very occidental oriented, this should be noted when analysing the indicators being used at the UN and other international organisations.

The OECD is an organisation that is focused on developing countries through an economic framework, the 37 current members are:

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7 The last ICIM Conference Proceedings are available In: http://www.pucsp.br/icim/Ingles/Downloads/icim2017-Proceedings.Pdf
ICIM is jointly organized by the Wuhan University of Technology (China), the Yamaguchi University (Japan), the Tilburg University (The Netherland), the Pontifical Catholic University of Sao Paulo (Brazil) the University of Vaasa and Vaasa University of Applied Sciences (Finland), the UniversitiTeknologi Malaysia (Malaysia), and the University of Wales Trinity Saint David (United Kingdom). Its purpose is to provide opportunities for researchers to present their findings based on innovation and management as well as to create opportunity for the exchange and synthesis of new knowledge on innovation and technology management (ICIM, 2016).8

We use the definition of well-being, as the principles that guides a welfare state, which the following basic attributes: access to education, non-violent, healthy and economically sustainable. (Stiglitz, 2012, p. 193). These are the minimum requisites to the UNSDGs as well as the ORIBER (2013)9 Guide(GPS). Correspond in fact to a bottom line for the development of other targets such as the UN SDG 5.A.1 – (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure.

To women have access to being owners of agricultural land, and having the ways to keep it, it is needed an equal footing, and that can be achieved in educating girls, so they can manage land, reducing crimes and creating an economic background that helps everyone to thrive. Actually, this beside the Inequality problem are the basic challenges according to the WEF.

2 Theoretical Reference

A corrupt act is an attack of destruction of the common Rogow&Lasswell (1970), but such thing is not easily determined. In the United States bribery is illegal, but it was replaced by political campaign contributions (Stiglitz, 2007) that are legal, and the donating companies are investing in their candidates. Recently (Brazil, 2017) changed it laws, no. 13.488/17, to forbid that kind of contributions, but that only after public opinion was strong in the subject after to big corruption scandals (Mensalão, big monthly, and Lava-jato, car wash).

Nowadays, after the 2008 financial crisis, many governments adopted and austerity approach of regulation of public expenditure, but in many ways that contradicts public opinion that perceive governments as corrupt. (Piketty, 2014) point out that is needed a global regulation and a better distribution of wealth and tax, given the
example of progressive tax laws and highly taxed heirdom. The main goal is to create more equal people, and thus strengthen democracy and the government efficiency. If the government is more efficient, the capital flow is directed to a productive motor, and is capable of effectively do a better world (Dowbor, 2017).

In this paper, we seeking in particular possible relationships between well-being and the lack of corruption, for this work were selected the following indicators:

1. Corruption (Cor)
2. Water and Sanitation (WaS)
3. Electric power consumption (kWh per capita) (EPC/pc)
4. Internet users (IU)
5. Level of violent crime (LvlVC)
6. Political terror (PT)
7. Press Freedom Index (PFI)
8. Access to Basic Knowledge (ABK)
9. Democracy Index (DI)
10. Global Innovation (GI)
11. Innovation Efficiency Ratio (IER)
12. Input Sub-Index (IIS)
13. Innovation Output Sub-Index (IOS)

The Corruption (Cor) deal with the perceived level of public sector corruption based on expert opinion. Water and Sanitation (WaS) is an indicator that considers 3 dimensions: access to piped water; rural access to improved water source and access to improved sanitation facilities. The Electric power consumption (ECP/cp) measures the production of power plants and combined heat and power plants. The indicator of Internet users (IU) estimated number of internet users out of the total population, using the Internet from any device, last 12 months. The level of violent crime (LvlVC) measures the impact of crime in government and/or business. Political terror (PT) refers to the level of political violence and terror in a country. The Press Freedom Index (PFI) measures the degree of freedom that journalists, news organizations, and netizens enjoy in each country, and the efforts made by the authorities to respect and ensure respect for this freedom. Access to Basic Knowledge (ABK) refers to some dimensions: adult literacy rate, primary school enrolment, secondary school enrolment and gender parity in secondary enrolment. Democracy Index (DI) provides a context of the state of democracy worldwide. The Global Innovation (GI) provides metrics about the innovation performance of 127 countries and economies around the world, considering: Innovation Efficiency Ratio (IER) what shows how much innovation output a given country is getting for is inputs; Innovation Input Sub-Index (IIS) what is comprised of five components that enable innovative activities (institutions, human capital and research, infrastructure, market sophistication and business sophistication); and Innovation Output Sub-Index (IOS) provides information about outputs that are the results of innovative activities within the economy: knowledge and technology outputs and creative outputs.

3 Methodology

For the study were considered 39 countries including members of OECD and ICIM. Three Groups of countries were organized as follow:

- Members of OECD only: Latvia, Belgium, Switzerland, Austria, Spain, Chile, Germany, Portugal, Estonia, Denmark, Norway, Canada, France, Australia, United States, Poland, Hungary, Greece, Turkey, Luxemburg, Czech Republic, Korea Republic of, Sweden, Colombia, New Zealand, Iceland, Israel, Mexico, Slovakia, Slovenia and Italy.
Members of ICIM only: Malaysia, China and Brazil

Members OECD and ICIM: Japan, Netherlands, United Kingdom and Finland.

Using Minitab as software data collected by ORIBER from many databases like the UN Data were analysed particularly concerning corruption indicators and well-being in the three mentioned groups. The selection of these 13 variables came through the development of the yearly studies analysis of ORIBER developed at the PUC/SP. It’s important to mention that for this study all the indicators considered were Normalized (0 – 100) and Positivized - the higher the better. For Luxembourg was used regression to estimate some missing values, for the case of: Electric power consumption, Level of violent crime, Political terror and Democracy index.

4 Results and Discussion

ANOVA analysis is a statistical method applied on this study to explore characteristics and relationship of the representative variables for the 39 countries considering the 3 Groups (OECD, ICIM and ICM+OECD). To apply this statistical technique - ANOVA the following steps were used: (1) Defining the 3 Categories concerning the 39 countries, (2) Analyses of the 13 variables for the model. Figure 3 reinforces the idea regarding different levels of Corruption on the 3 Groups, and shows as well, that Innovation follows the same pattern, which may indicate differences on Level of Development.
In the ANOVA analysis the outliers found were:

- WaS (Water and Sanitation) Latvia, Republic of Korea, Mexico and Colombia;
- EPC/pc (Electric power consumption (kWh per capita)) Iceland and Norway;
- LvLVC (Level of violent crime) Mexico and Colombia;
- PT (Political terror) Mexico;
- PFI (Press Freedom Index) Turkey,
- ABK (Access to basic knowledge) Latvia;
- DI (Democracy Index) Chile and Latvia.

Colombia, Latvia entered recent as members of OECD but were always in the bottom quartile, Mexico is struggling with drug cartels and has problems with water resources. Iceland and Norway are positive outliers with a much bigger EPC/pc than any other country; Iceland output per capita is more than double of the Finland. In Turkey, after the attempt of a coup d’etat, were passed many laws restricting Press. Chile recently is struggling with its reforms of labour and education, but in general is going much better than the others; particularly regarding Governance. The OECD+ICIM member are closes to achieve an effective battle against corruption, the OECD member usually are highlighted by resolving infrastructure problems like Water and Sanitation (WaS) and Electric Power (EPC), more than their access to basic knowledge strengths its democratic systems. Access to basic needs are linked to surviving, member that only are on ICIM are fighting against Political Terror (PT) and Press Freedom (PFI) and Violent Crime (LvIVC). Broadly speaking the members of OECD+ICIM seem to be doing better in Corruption combat (Cor). The countries doing worst are the Ibero-american Mexico, Brazil and Colombia plus Turkey and China. Australia, Canada, New Zealand, Sweden and Finland are the countries with better economies, strong infra-structure and well developed as well as many indicators related to wellbeing; a good example for all. On the other hand, some countries of the ICIM group (Malaysia, China and Brazil) stand out in the Innovation Efficiency Ratio (IER) that shows how much innovation output these countries is getting for its inputs.

![Corruption Map](image-url)
When comparing the before analysed data with the map of where corruption is found, the countries that have the best performance in wellbeing are the same that effectively combat corruption. These results were the expected of the post 2008 crisis, since countries like Australia, Canada, New Zealand, Sweden and Finland have a more equalitarian society (Stiglitz, 2012, pp. 22-24), mostly concerning 3 drive forces: equality of education, equality of health and equality of opportunity. At the present stage of capitalism is hard to found balance, and we should do everything to close the gap between the many inequalities of the world. (Schwab, 2016) point out that no equality could be achieved if there are people that are still not touched by the first industrial revolution, without access to tapped water, and therefore, without a trustworthy source of clean water. There is no equality in education between people with access to electric power and people without, people with electricity can beyond light have more channels of information (radio, TV, digital stored encyclopaedias), and when we factor access to internet (and the quality of it), all these —basic needs— are still a greater challenge that deepens the inequality.

In the best performing countries, all of them have little inner inequality, that ends up minimizing external inequality, obviously these do not eliminate individual differences, but in a more equally field context where the fact that individual gains more by cooperating generates a positive feedback loop, creating a more generous horizon (the Sharing Society, the Circular Economy). As noted in the Iterated Prisoner's Dilemma (Stewart & Plotkin, 2013), as the populations grows, and the gains remains equal, strategies that are aligned to generosity and good behaviour thrive; and the Principle of Fraternity becomes alive.

(Schwab, 2016, pp. 6-7) points that at each industrial revolution some new basic things are needed, that helps develop not only the industry, but the society as whole as it happens since 1760 with the first industrial revolution, and access to water. On the second industrial revolution, electricity and liquid combustible were distributed as sources of power to engines, and more recently semiconductors and internet are the door to the third industrial revolution. The lack of water, power and internet could be easily linked to corruption, mostly because they need public infrastructure, mainly hard infrastructure like aqueducts, water treatments, power grid and internet fibers; and the Infrastructure and Urban Development industry unfortunately involves a lot of money and end up having strong ties with corruption (WEF, 2017)\(^\text{11}\), as was the case of Brazil lately.

Moreover since access to meet human needs and transparency are basic in the development of innovations, it is essential to invest in people, technology and mostly in Ethical Governance as mentioned recently in an Interview the Brazilian Political Scientist Ruben Ricci —Corruption occurs in countries that have high social inequality and in a state that is appropriated by elites\(^\text{12}\). To reinforce these ideas figure 5 shows the overall relationship among the 13 variables. So for example, the behaviour similarity between LvIVc and PT, on the extreme right of the graph(on red), seems to indicate that violence tends to happen together, being against individuals and/or institutions; and on the right hand of the graph(on blue), one could also see that there is a behaviour similarity among the well-being indicators (WaS, ABK, EPC/pc) on the one hand; and even more strongly similarity among Innovation (IIS), Corruption (Cor), and Internet Users (IU) on the other hand. All these seems to suggest the need for a more Systemic and Ethical Governance Framework that may foster Transparency, Press Freedom and Free Flow of Information that jointly could lead up to a more solid structure, enabling improving innovation in institutions, human capital, research, infrastructure, market and business sophistication.

CONCLUSION

As noted in this article, control of corruption and infrastructure that creates a welfare state are deeply connected, but in a world of the post 2008 crisis an alternative to reducing the state is combating corruption and using the recovered resources to invest in strengthen a more Transparent and Democratic context that fosters development in Infrastructure, Knowledge and Liberty. Innovation is an important aspect in the search for solutions and development of new more Organic Ecossystemic paths.

Thinking in something like the Maslow Pyramid of Needs, one could start first by thinking on Access to Basic Needs such as Water, Sanitation, Electric Power and Internet that may help to reduce inequality, if associated with education and an organized society as recommended by Amartya Sen on his contributions to welfare economics, social choice theory and economics and social justice. Actually the steps needed for a more stable and resilient country passes by these factors too, and we could actually by comparing and learn from what other countries are doing or have done before as benchmarks.

In the best performing countries, they have very different sizes of the worst performing countries, especially China, Brazil, Mexico and Turkey. In all these countries many cultures with specific needs, in a vast geographic region that have very specific subset of its own difficulties. Maybe for these kind of countries the best approach could be a more decentralized approach, learning from countries that share similarities, and establishing cooperation agreements like the BRICS, but that may really work; although eventually some problems may arise as is the case nowadays with the EU with the BREXIT and in the US with Trump. As matter of fact as it was mentioned recently BRICS meet but the US is protagonist because of the Commercial war with China.

Nonetheless there are signs that things may be changing at our region. Colombia was accepted at the OECD and the agenda of the elected new President of Mexico Lopez Obrador includes a strong fight against Corruption plus strict Austerity Policies at the Public Level.

Innovation, Wellbeing and Control of Corruption could really help to foster sustainable development of the countries. Besides Climate Change, concentration of Wealth and Growing Inequality are today some of the greatest threats for the future of society. Moreover the solutions like the problems need to think in a more Holistic approach and deal with many levels at the same time; so that we could tackle great inequalities starting with neighbourhood or villages, passing to cities and counties until we have a globally common landscape as a starting point, and the going down again. This equality is what make the societies in the better performing
countries more resilient to crisis, but if there is not established a cooperation and a balanced playfield, today resilience will be tomorrow inequality; moreover we could not forget that Equality is just one of the Three Basic Principles the other ones are Freedom and Fraternity; and should also go along in the process. We all could help to build a better the future, the ones that got there first must signalize to the ones that are looking for their way, and the ones that are trying to get there should not lose hope, and keep trying.

REFERENCES


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