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Introduction of Euro in Hungary

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Highlights

Unemployment on Economic Growth

Impact on Competitiveness in Algeria

Discovering Thoughts, Inventing Future

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Some Questions of the Introduction of Euro in Hungary

By Tibor Palánkai

Some General Remarks- The question of monetary integration was part of discussions on European integration from the beginning, in Hungary. That applied to Euro as well, and there was no question that it is part of our integration project. We have different waves of discussions, but there was an overwhelming support of the project from great number of the experts. The discussions were professional, less politicized and divided compared to Poland or Czech Republic, and several high quality studies were published on the issue. The discussions intensified again last year and early this year and several studies and articles were published. Among them, the initiative of Hungarian Nation Bank (HNB) on Maastricht22, and the dispute between the Hungarian Minister of Finances (MIhály Varga) and the president of HNB (György Matolcsy) got particular attention. I refer to two articles of the Journal of Counterbalanace (Egyensúly), one from Bod Péter Ákos ((former President of the Hungarian National Bank) and István Dobozi (Former Lead Economist at the World Bank). This article refers and reflects on the main points of these discussions.

The Euro is an economic and business project. Of course, its introduction and construction was determined by complex political expectations and interests, and it is important symbol of the political integration and unity of the European Union.

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Some Questions of the Introduction of Euro in Hungary

Tibor Palánkai

I. Some General Remarks

The question of monetary integration was part of discussions on European integration from the beginning, in Hungary. That applied to Euro as well, and there was no question that it is part of our integration project. We have different waves of discussions, but there was an overwhelming support of the project from great number of the experts. The discussions were professional, less politicized and divided compared to Poland or Czech Republic, and several high quality studies were published on the issue. The discussions intensified again last year and early this year and several studies and articles were published. Among them, the initiative of Hungarian Nation Bank (HNB) on Maastricht22, and the dispute between the Hungarian Minister of Finances (Mlhály Varga) and the president of HNB (György Matolcsy) got particular attention. I refer to two articles of the Journal of Counterbalanace (Egyensúly), one from Bod Péter Ákos ((former President of the Hungarian National Bank) and István Dobozi (Former Lead Economist at the World Bank). This article refers and reflects on the main points of these discussions.

The Euro is an economic and business project. Of course, its introduction and construction was determined by complex political expectations and interests, and it is important symbol of the political integration and unity of the European Union.

The Euro stands on *two legs,* its stability and future cannot be understood without them. These are partly the *high level of integratedness of the EU,* and partly the requirements of *creation of the single market* among the member countries.

Some years ago, we made an attempt to determine and measure of level of integratedness of countries and integration groupings. In the framework of so called *Integration Profiles* research we made these comparisons on the basis of about two dozens of parameters. Among them, such as intensity of relations, interconnectedness and interdependence, structural convergence, balances of trade, financial and capital relations, and some indicators of macro-convergence.

We put the countries and organizations *on a 100 per cent scale in 5 groupings.* Accordingly, up to 10 per cent, there is no integration, from 10%, we can speak about low, from 30% about medium, from 50% high and from 70% very high levels of integration. We made calculations only about the EU. But on the ground of estimations, we could assume that in the last 50 years the global interconnectedness has surpassed the 10% level, and therefore, it is justified to speak about *"global integration".* It also seems that the integratedness level of the different interstate regional groupings (ASEAN, Mercosure, Nafta) has not reached the 30%, namely it remained on low level. At the same time, in total the *EU surpassed the 50% (high) integration level.* Among them, about 6-8 countries (small, developed and CEE countries including Hungary) fell into the above 70% category, namely they can qualify for extremely high integratedness. (Palánkai, 2014/1 és 2017/3)

At the high level of integration the savings on transaction costs can be high enough to influence substantially the competitiveness of the region. It is another question, how far they can be calculated exactly. The problem was similar with the customs union. The advantages were obvious, while in the analyses based on Viner methods proved to be marginal. Therefore, it is important to stress that the Euro is not just a political creature, but it is important element of competitiveness of EU economy. One should not forget about this when speaking about the too "early" introduction and relevance of the Euro.

The other "leg" is the *single European market.* There is a large literature about the mutual assumption of the single market and the EMU. We refrain from discussing it, but we refer only on the divergence aspects.

The market liberalization among the countries with high differences in levels of developments and with oligopolistic market structures unavoidably leads to increasing inequalities of distributions of advantages of integration. Based on spontaneous market mechanisms, the rich countries get richer, while the poor get poorer. This problem was already clear by creation of the common market after 1968. But as this was demonstrated rather on regional levels instead of national ones, it was not by chance that after 1975 the Regional Development Fund was created. In reality, it served *compensation,* although the declared aim was rather promotion of development.

The increase of inequalities in the EU was basically connected to the single market, although it is the anomaly of the global capitalism. In absence of corrections and compensations these differences are

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deepened by spontaneous market mechanisms. The extension of regulated market economy to union level, therefore, should be a strategic aim. The Economic and Monetary Union and the single market should form a strategic unity.

In policy integration, such fields as monetary, fiscal or financial policies play important role, and the money (Euro) is a basic tool. The increase of inequalities, therefore, does not follow from the Euro, but the EMU as an element regulated market economy model, among others should rather deal with inequality anomalies. It is another question how far the commitments of the Lisbon Treaty for „competitive social market economy" were fulfilled. (Palánkai 2017/1)

The Maastricht decisions on monetary integration were born for 12 members, but they were tailored rather to the 6 core countries. As result, the Maastricht criteria *focused primarily to one single priority, namely price stability*. The requirement of *convergence was practically neglected,* although in a heterogenic monetary union, the stability and coherence without it cannot be achieved. Perhaps, the explanation can be that Ireland and the three Mediterranean countries joining in the 1980s years, in the decade before Maastricht produced a spectacular convergence. Till the approving the Maastricht decisions, even the association agreements with the CEE countries have not been signed. At the time, the membership of these countries was not an agenda, and then from the end of 1990s, the convergence of the CEE regions was also spectacular.

Through enlargements the asymmetries of internal market (rules of which took force "upon entry") increased substantially. The correspondence to optimal currency area was questioned from the beginning, and by enlargements it was even so. In spite of convergence of per capita GDPs, the regional differences remained and due to overwhelming market positions of large companies of developed members, the market inequalities persisted. In these respects, contrary to some views, the role of the Euro cannot be identified.

One of the main arguments of opponents of the Euro is that *we should achieve a certain level of development before joining the Euro-zone*. In general, it should be stressed, however, that *creation of a monetary union does not depend on level of development and its internal divergences.* We have several monetary unions in different federations, let they be, India and Brazil, or US and Canada. It is another question that the construction of these monetary unions due to their specificities and endowments should be substantially differing. The specificities refer to level of developments and structures, to socio economic relations, political and historical traditions and many other factors.

The connection of introduction of the Euro to certain level of per capita GDP is not only theoretically, but also methodologically is false and misleading. The GDP is too much imperfect indicator for using for such an important strategic decision as Euro introduction. GDP is a mix of input and output data, and as it can take into account the actual expenditures, it is unable separate waist and corruption. A railway line can be built for 100 million Euros, but if it was built for 200 in reality, it is calculated on that. By this the waist and corruption become as a factor of growth. Of course, the main factors of competitiveness should be taken into account, like productivity, structural differences, state of trade balance and costs and many others.

Consequently, in the EU as well, the problems arose not just because of monetary union, but due to its given construction. It would be too long to analyse all of the deficiencies of the Euro, but at least, three of them can be specially mentioned. One was the *overestimation of coordination and controlling role of the market mechanisms.* As it turned out the market instead of disciplining rather inspired irresponsible attitudes (cheap money used for buying votes or speculating with real estate), and then only punished afterwards, in fact very cruelly. There were *deficits in the construction of institutions and policies of the monetary union*, which after 2010, in the process of reform of Euro governance were largely corrected, even if the full consolidation is not yet competed. Furthermore, the monetary integration would assume the *strict adjustment and discipline of national policies.* In fact, the break and sabotaging of the rules, and the free riding characterised all of the countries, there were differences only in their extent and consequences. The Euro was a tool, but its guilt is fully irrelevant.

II. Euro and Hungary

I fully agree with those views, according to which the *introduction of the Euro in Hungary is a general national interest.* The excellent analysis of Bod Péter Ákos on the cost and benefits gives a complex and convincing picture. Summarizing the factors, he concludes: „On the basis of thorough examination of the economic arguments and facts, I cannot say other then, that for an economy with similar size, structure and tradition, like Hungary, the permanent use of separate mean of payments, and burdening the related costs and risks on the population, is not advisable." (Bod Péter Ákos, 2019: 8)

More than half of the Hungarian population stably supports the Euro introduction. According to a recent representative (asking 1000 peoples) public opinion research, on the question: "Would you support the introduction of the Euro replacing the Forint as soon as possible?" from the total Hungarian population, 65% answered with yes. (Pulzus Research - Pulzus Kutató, Index, June 3, 2020.)

At the same time, *there is no such a socio-economic interest group, which would take the case of*

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the Euro on its shoulders. Traditionally, in general, the main supporters of the Euro introduction were the *Transnational Companies.* They were the main beneficiaries of the project, and the reduction of the transaction costs served primarily their interests.

The Hungarian economy is one of the most transnationalized among the member countries. As it means dominance of foreign investors, there is no limit that these companies maximally use Euro where it is advantageous and desirable for them. And they broadly use it. At the same time, they have no disadvantage, but it is rather advantageous for them the existence of a parallel national currency, which is gradually devaluating. They conduct their international transactions in Euro, while, in case, it is definitely advantageous to finance wages, local services and supplies in the devaluating local currency. The dual currency systems are good from points of view of tax evasion, profit transfers and speculation.

Both large and smaller domestic companies are not active on global markets. The Euro for them is not of life importance. The main beneficiaries of the structural and agrarian funds are companies primarily oriented to domestic markets (food or construction companies), it is advantageous to get revenues in Euro, while calculating cost in local currency. The banking sector is largely counter-interested. The commercial banks fear of loosing the large conversion fees, while the national bank for loss of seigniorage incomes.

The political scene is deeply divided, even inside the parties. No doubt, that taking over the single currency means limiting national sovereignty and room of manoeuvring (even if illusory), and therefore, the parties, particularly in governing positions are cautiously and reluctantly approaching the issue. The opposition is generally committed to the Euro, but as it is a risky campaign question, it does not hurry with relevant introduction strategy.

The introduction of the Euro in Hungary raises several strategic and also technical questions. In fact, we are parts of the EMU and we were assumed to take the aqui communautaire "upon entry", and in these respects. The only derogation is the joining of the Euro-zone (originally the "third stage" of implementation). For this we have contractual obligation without deadline.

As it is analysed by Bod Péter Ákos, we should stress that *on the basis of high euroization of Hungarian economy, we are parts of the Euro-area* (contrary to "zone"). Theoretically, we can speak about "dollarization" or "euroization", if the proportions of these currencies in the national monetary circulation exceed 10%. There are no relevant and reliable calculations on these, but on the basis of the shares and export role of TNCs, the proportion of the Euro can be estimated substantial (probably exceeding 50%). In the private transfers and the retail sectors, these shares are less extended, but there is not without foundations to speak about a certain *"creeping euroization"*. In several sport sectors, the imported players are paid directly in Euro. In Croatia, the level of euroization seems to be higher (tourist incomes and pension transfers). "It is not exaggeration to tell that the Hungarian (Danish, Bulgarian or Czech) economic players are already long in the Euro-area, and only the population and the state are outside." (Bod Péter Ákos, 2019: 4)

In the last years, *in the group of Euro candidates we can witness the formation a specific monetary construction.* This is *a dual currency system with floating exchange rates.* The exception is Bulgaria, where a currency board was introduced with fixing the national currency to the Euro already since 1997. The differences among the countries are in the mood of floatation (directed or spontaneous), in extent of devaluation and in relation of related policies.

It should be noted, that in Hungary in the following 10 years of 2008, the forint to the Euro was devaluated by about 30%. In the same period, the Czech crone and the Polish zloty showed a relative stability. (We do not speak about the events of last months.)

Due to complexity of processes, the analysis of effects of exchange rate changes is not easy. The impacts of devaluation, and their disadvantages are not easily identifiable.

The devaluation does not improve "competitiveness", but it creates possibility for adjustment. It can keep the producer on the market transitorily, gives a breathing time for making real steps for cutting costs and improving quality of the product. At the same time, as in the national currency it creates quasy-profitability, it can reduce the constraints for adjustment or postpone it. The free riding on the quasy-profitablity may be one of the most negative consequences of devaluation. How general is this free riding, is indicated by the example of continuously devaluating countries.

On the basis of Hungarian foreign trade structure, the question seems to be ambivalent. No doubt, that the devaluation can create unjustifiable incomes for TNCs and many local companies, while it is uncertain how far it helped the acquiring and keeping markets for the local Smes? As the local Smes are unable to hold on the global markets, this deficit of our integration seems to persisting.

Furthermore, as devaluation is reduction of welfare, namely it is restriction. Generally, socially more acceptable as through inflation it diffuses welfare losses to the whole society. The inflationary impacts of forint devaluation were not proportional, which can be explained by several factors. The money inflation was counterbalanced by demand and cost deflation (decrease of oil prices), and it seems that the demand deflation could even counterbalance such cost inflationary pressures as explosion of wages. Of course,

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we should distinguish between statistical and real inflation experience daily during our shopping.

Theoretically, the construction of dual currency system is not new, in fact, it *recalls the British proposals on the monetary integration* (John Major). The Brits did not reject the monetary union. On contrary, they were in favour. And their proposals were not irrelevant.

The proposal was about "common" currency, parallel preserving the national monies. (Not surprisingly from a country formerly having an international key currency.) The proposal was definitely rejected by the German, and they voted in favour of the "single" currency. According to them, the supposed crowding our effects may have undesirable inflationary and redistribution impacts, and they should be avoided. In our region, these crowding out effects cannot be identified.

The dual currency systems of our region seem to be sustainable even for longer run. The direct constraints for changing to Euro are rather political and legal. The system is, however, sub-optimal, the counter-interests (TNCS, local large companies or banks) imply social losses. The arguments for Euro introduction clearly prove that.

For the coming years, it is difficult to make prognoses. From the six candidates, three (Bulgaria, Croatian and Romania) have already an accession program, and even the target dates are indicated. In the past, these target dates were postponed several times, but the chances of implementation are increasing. The possible Euro-zone joining of Romania and Croatia would raise the Hungarian entry to a national-political issue.

The Czech and Polish staying outs are explained by strong sovereignty arguments. Of course, it would be difficult to deny how the monetary policy sovereignties are illusory. But they can be overwritten by broader political considerations. Interestingly, the Slovak joining of the Euro-zone were also based on sovereignty considerations, but with opposite signs. If they sit at the table of decision, they may influence them, while outside, these decision are made above their head. In fact, it should be noted, for Poland as for a medium power of the Union, these chances for influencing would be much favourable.

There are chances for further "creeping" euroization. For example, the reduction and elimination of cash transfers may offer several possibilities. In Hungary, it is also a future program. This could mean that the Euro is not introduced in cash forms, while parallel the national currency is also withdrawn from the financial turnover. On the accounts, the prices and the transfers can remain to be registered in both currencies, but the plastic card does not tell anything about what money was used. Of course, it assumes fixing the exchange rates and elimination of conversion fees. Later can be marginalized (tending to zero) by the present information techniques, and the banks can be compensated for loosing revenues from conversion fees.

III. Making Reforms Together

The consolidation and reforms of the Euro-system call for fundamental structural changes. The dealing with debt crisis has of utmost importance. The Euro so far has avoided the classical currency crises (inflation and devaluation), the euro crises were debt crises, originating primarily the Southern members. Management of debts are basically about debt cummulation, and there are no chances that they ever can and will be paid back. The paralyzing impacts are well known, and the situation can be aggravated by the Covid 19 crisis.

Due to largely increased heterogeneity of the participating countries, *besides the stability, the convergence should also become strategic priority of the Euro-zone.* The present cohesion crisis could be solved and the future ones can be avoided only this way.

There are several possibilities, but I think that *the present Euro architectures should be supplemented by a set of Cohesion and Convergence Structures.* Although, I find the "no transfer union" slogan highly misleading, I do not think that they should be about primarily money transfers. (The great parts of transfers are *market transfers,* and related to oligopolistic profits of large companies. While the burdens of *fiscal transfers* fall on tax payers, which raises delicate social and political questions.)

The *new structures should be based primarily on programs and policies.* One of the major integration deficits of our region is the weak presence and position of local companies (mainly Smes) on the global markets. Among others, the supportive programs and policies could help acquisition and strengthening positions of these companies on external markets or their entry and up grading in the global value chains (which could attract the support of TNCs as well). Many of the Smes of developed countries meet the criteria of transnational company behaviours and policies, which in many respects one of the indicators of developed status of a country. The supportive programs could help sub-regional cooperation (including trans-border ones), could be crisis prevention and evasion measures for companies, organizations or individual (re-employment or re-training).

No doubt that we are interested in an economic and monetary union, which promotes *convergence from inside.* It is encouraging that there is a readiness on the developed members to think along these lines (Merkel-Macron).

There are discussions about *premature joining.* It is a *typical alibi argument of opponents* that we join the Euro-zone only when our economy is prepared for that.

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These usually imply that we need still long time till we reach such stage. As the case of several countries (Slovakia or Baltics) indicated, the question basically *depended on the political determination.* By the early 2000s, the economies of the region reached a state that if this will existed and it was supported by a relevant preparation program, the joining could have been realized in a less then a decade perspective. On the other hand, if we are just only waiting for "maturing", the whole thing can fade away for decades.

And as the Slovak example proved, in 2004 (year of joining the EU) our (Hungarian) target deadlines for 2008-2009 Euro introduction could have been realistic. The Slovaks were not in better position than us, and the about 5 years of preparation would have been enough for us as well. But the Slovaks had that determination and consequently implemented their adjustment program. I remember our governmental excuses that we should wait because it would mean too high social costs. At end, as it turned out, we had multiple social costs because of postponing. It is enough only to refer to the suffering of hundred thousands of victims of Swiss franc indebtedness, which could have been largely avoided by adoption of the Euro.

At the moment, again, we have no serious reasons for waiting for fulfilment of vague convergence objectives. Rather we need serious proposals from those who support the case of joining. The bon mot is no longer valid that one should not move into a house which is smoking, but this is not the case with a half-built one. People buy half- built houses as they can decide about the colour of the wall and the tile, and the place of bath tub. I think that it would be basic Hungarian interest to take part directly and actively in the final reforms and completion of the Euro project. We should reconsider the slogan, that the case is not urgent.

It is obvious that due to Covid 19 crisis, the question lost its immediate actuality. But even if the perspectives of reconstruction and consolidation are uncertain, from point of view of rapid getting out from the present paralyzed situation, the issue remained of strategic importance.

05. 15. 2020.

Literature

1. Bod Péter Ákos. Euróövezeti tagságunk: van-e akarat? (Our membership in the Euro-zone: Is there any will? Ellensúly, (Counterbalance), 2019. 4. sz.
2. Dobozi István, Miért „sánta" közös valuta az euró? (Why is the common currency the Euro "lame"), Ellensúly, (Counterbalance), 2019. 4. sz.
3. Matolcsy György, 2022-ben itt lesz az ideje megreformálni az eurót. (There is time to reform the Euro in 2022). Protfolio, 2020. 02. 13.
4. Neményi Judit, Obláth Gábor, Az euró bevezetésének újragondolása, (Rethining of introduction of the Euro) Közgazdasági Szemle, (Economic Review) 2012/6., 569–684. Többen állást foglaltak a témában, köztük magam is: Bod Péter Ákos, Az euró átvétele nem pénzügyi, hanem nemzetstratégiai döntés, Közgazdasági Szemle, 2012/6., 695–698. A hozzászólók közül kiemelem a következőket: Csaba László, Milyen euró kell nekünk? És mi végre?, Közgazdasági Szemle, 2012/6., 706–709.; Mihályi Péter, Ez a hajó elment, Közgazdasági Szemle, 2012/6., 917–922.
5. One market, One money. An evaluation of potential benefits and costs of forming an economic and monetary union, European Economy, 44. October. European Commission. Brussels.
6. Palánkai, Tibor (ed) (István Benczes, Jody Jensen, Ákos Kengyel, Gábor Kutasi, Gábor Miklós, Sándor Gyula Nagy). (2014) *Economics of Global and Regional Integration.* Akadémiai Kiadó. Budapest.
7. Palánkai, Tibor (Miklós Gáborral) (2014/1) Magyarország integrációs profilja (Integration profile of Hungary), *Közgazdasági Szemle,* LXI. Éf. 2014. április. 452-485 pp.
8. Palánkai, Tibor (2014/2) *The origin and characteristics of the Euro crisis and solutions* in Reframing Europe's Future Challenges and failures of the European construction Serie: Editors: Jody Jensen and Ferenc Miszlivetz Routledge 2015 New York, London. 115- 135 pp.
9. Palánkai, T. (2017/1) *Gondolatok a 21. századi kapitalizmusról és a "szociális államról"* (Reflections on the 21st Century Capitalism and the "Social State". (Ispired by Thomas Pickety's Capital in the 21st Century). *Magyar Tudomány*. 2017/I.
10. Palánkai, T. (2017/2) *The Euro and Central Europe. Society and Economy,* Corvinus University of Budapest, Akadémiai Kiadó, Volume 39. Number 1. March. 1-25 pp.
11. Palankai, Tibor and Gabor, Miklos, (2017/3) *Integration Profiles for Central Europe and Hungary,* ed. Philippe De Lombaerde and Edgar J. Saucedo Acosta, in Indicator- Based Monitoring of Regional Economic Integration. Fourth World Report on Regional Integration. UNU-CRIS, Bruges, Belgium. Springer. 95-133 pp.
12. Tényleg kell-e nekünk az euró? (Should we need really the Euro?) Eötvös Csoport (Group) ülése (session), 2020. 01. 08. Index/hu/gazdaság.

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Covid-19, Securite Alimentaire et Revenus des Menages au Cameroun: Une Approche par le Modele de Regression Probit

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Abstract- The main objective of this study is to assess the effects of COVID-19 on household income and food security in Cameroon. In this evaluation, the data used was collected using an online questionnaire sent to random respondents using social networks (Whatsapp, Facebook and Telegram). This data appropriation strategy proved to be the best method in the presence of the process of social distancing which did not allow the possibility of conducting the interviews face to face. We use the recent methodology developed by Kansiime et al. (2020). Our online questionnaire was open over a period of 15 days, from March 17 to 31, 2020. The choice of this period is dictated by the start of the containment measures adopted by the Cameroonian Government. According to the answers obtained, 303 and 250 people respectively in the cities of Yaoundé and Douala answered this questionnaire for a total of 553 respondents. To estimate whether a respondent's source of income has been affected by COVID- 19 and whether the diet has deteriorated, the PROBIT regression model is used. The results obtained show that ceteris paribus: *(i) the farmer is 55% more likely to experience the negative effects of COVID-19 on his source of income. (ii) salaried employment is 65% less likely to be adversely affected by COVID-19 on their food security.*

Keywords: *COVID-19, household income, food security, probit model.*

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Covid-19, Securite Alimentaire et Revenus des Menages au Cameroun: Une Approche par le Modele de Regression Probit

Mohamadou Oumarou

Résumé- L'objectif principal de cette étude est d'évaluer les effets du COVID-19 sur les revenus des ménages et la sécurité alimentaire au Cameroun. Dans cette évaluation, les données utilisées ont été collectées à l'aide d'un questionnaire en ligne envoyé à des répondants aléatoires en utilisant les réseaux sociaux (Whatsapp, Facebook et Telegram). Cette stratégie d'appropriation des données s'avère être la meilleure méthode en présence du processus de distanciation sociale qui ne donnait pas la possibilité d'effectuer les entretiens face à face. Nous utilisons la méthodologie récente développés par Kansiime et al. (2020). Notre questionnaire en ligne était ouvert sur une période de 15 jours soit du 17 au 31 mars 2020. Le choix de cette période est dicté par le début des mesures du confinement adopté par le Gouvernement camerounais. Aux termes de réponses obtenues, 303 et 250 personnes respectivement dans les villes de Yaoundé et Douala ont répondues à ce questionnaire soit un total de 553 répondants. Pour estimer si la source de revenu d'un répondant a été affectée par le COVID-19 et si l'alimentation s'est détériorée, le modèle de régression PROBIT est utilisé. Les résultats obtenues montrent que *ceteris paribus: (i) l'agriculteur est à 55% plus susceptible de subir les effets négatifs du COVID-19 sur sa source de revenu. (ii) l'emploi salarié est à 65% moins susceptible de subir les effets négatifs du COVID-19 sur leur sécurité alimentaire. (iii) les répondants ayant un revenu relativement élevé étaient plus susceptibles de compenser les risques de revenus et d'insécurité alimentaire liés à la pandémie que les répondants plus pauvres. (iv) globalement, les résultats obtenues montrent que qu'il y a eu détérioration des sources de revenus et de la qualité alimentaire des répondants au Cameroun au cours de la période du COVID-19.* Le gouvernement doit mettre en place des systèmes fiables qui aurons pour objectif principal de garantir le suivie dans les chaînes d'approvisionnement alimentaire sur toute l'étendue du territoire, et en particulier dans les zones qui ont enregistrés des cas.

Mots clés: COVID-19, revenu des ménages, sécurité alimentaire, modèle probit.

Abstract- The main objective of this study is to assess the effects of COVID-19 on household income and food security in Cameroon. In this evaluation, the data used was collected using an online questionnaire sent to random respondents using social networks (Whatsapp, Facebook and Telegram). This data appropriation strategy proved to be the best method in the presence of the process of social distancing which did not allow the possibility of conducting the interviews face to face. We use the recent methodology developed by Kansiime et al. (2020). Our online questionnaire was open over a period of 15 days, from March 17 to 31, 2020. The choice of this period is dictated by the start of the containment measures adopted by the Cameroonian Government. According to the answers obtained, 303 and 250 people respectively in the cities of Yaoundé and Douala answered this questionnaire for a total of 553 respondents. To estimate whether a respondent's source of income has been affected by COVID-19 and whether the diet has deteriorated, the PROBIT regression model is used. The results obtained show that *ceteris paribus: (i) the farmer is 55% more likely to experience the negative effects of COVID-19 on his source of income. (ii) salaried employment is 65% less likely to be adversely affected by COVID-19 on their food security. (iii) respondents with relatively high income were more likely to offset the risks of income and food insecurity associated with the pandemic than poorer respondents. (iv) overall, the results obtained show that there was a deterioration in the sources of income and the food quality of respondents in Cameroon during the period of COVID-19.* The government must put in place reliable systems whose main objective will be to ensure monitoring in food supply chains throughout the country, and in particular in areas that have recorded cases.

Keywords: COVID-19, household income, food security, probit model.

I. Introduction

Notre planète a une longue histoire d'exposition à des crises sanitaires mortelles et à des pandémies. Ces crises sont pour la plupart le résultat d'une catastrophe sans précédent, qui a contraint les gens à faire des compromis sur leurs modes de vie existants (Workie et al. 2020). Parmi ces crises sanitaires récentes se trouvent la grippe espagnole, la poliomyélite, le syndrome respiratoire aigu et sévère, le choléra et le virus Ebola. Au siècle dernier, les décès dus aux maladies virales sont bien plus que les grands conflits armés (Adda, 2016). Par exemple, au début du siècle dernier, la grippe espagnole était l'une des pires catastrophes qu'a connue le monde qui a entraîné la perte de 50 millions de vies. Dans cette logique, signalé pour la première fois à Wuhan dans la province chinoise du Hubei en décembre 2019, la nouvelle maladie à virus Corona (surnommé COVID-19) s'est rapidement propagé dans le monde (Singhal, 2020). Qualifier d'épidémie en 2019, le virus corona s'est largement répandu dans d'autres provinces de la Chine continentale (Muhammad et al. 2020). Par ailleurs, plusieurs cas ont été confirmés dans les pays

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voisins comme la Thaïlande, le Japon, le Singapour et la Corée du Sud (Huang et al. 2020). Six semaines après la confirmation du premier cas, l'OMS[1] a déclaré le COVID-19 comme une pandémie et une préoccupation internationale qui avait besoin d'urgence sanitaire. Cependant, la pandémie s'est rapidement propagée et est devenue un défi formel en particulier dans les pays de l'Europe du Sud, de l'Amérique du Nord, de l'Asie du sud Est. Le COVID-19 est depuis devenue une maladie sans précédent qui a conduit à des crises économiques et sociales dans le monde. Les restrictions liées à la pandémie du COVID-19 ont impactées la majorité des étapes dans la chaîne d'approvisionnement alimentaire. En effet, cette pandémie a touché la production, la distribution, la transformation et la consommation (Siche, 2020; Torero, 2020). Il a également causé des dommages aux denrées agricoles périssables comme la viande et les légumes (Nicola et al. 2020). Dans ce contexte, les prix des aliments les plus nutritifs se voient à la hausse[2].

A travers le processus de la mondialisation à grande vitesse, les pays de l'Afrique ne sont pas exclus des effets de cette pandémie. En effet, moins affecté que les autres régions du monde, le continent africain fait face, lui aussi à la propagation du COVID-19. Par ailleurs, à cause de sa faiblesse en technologie comparativement aux restes du monde, on craint que cette région ne puisse affronter cette pandémie qui fait des ravages dans les pays développés. Dans cette logique, l'Afrique doit se réveiller et se préparer au pire face aux effets néfastes de cette pandémie (OMS, 2020). Dans cette région, le premier cas de COVID-19 a été signalé en Egypte en février 2020 à cause des forts liens commerciaux qu'il entretient avec la Chine, et la maladie a depuis continué à se propager dans la région avec de nouvelles infections signalées chaque jour. Dix semaines après les premiers cas apparus en Afrique du Nord puis en Afrique du sud, le continent au 14 avril comptait 1000000 de cas des patients. L'ASS[3] reste l'une des zones les moins affectés du monde et l'Afrique du sud est le pays le plus touché. Le 09 aout 2020, le continent africain compte 22491 décès confirmés et 705016 guérisons pour 1022084 cas enregistrés selon le centre pour la prévention et le contrôle des maladies de l'Union africaine. Selon la directrice pays de l'ONUSIDA, de nombreux pays d'ASS, dont le Cameroun, seraient mal préparés pour affronter l'effet dévastateur de la COVID-19 sur les secteurs de la santé et de l'économie.

Au Cameroun, le premier cas est confirmé le 06 mars 2020. Il s'agit selon les informations du Ministre camerounais de la santé publique d'un ressortissant français de 58 ans, arrivé à Yaoundé, le 24 février 2020 (MINSANTE, 2020). Depuis cette date, conformément aux directives de l'OMS et aux pratiques des instructions des institutions hospitalières locales, le gouvernement du Cameroun a institué diverses mesures pour faire face à la propagation de cette maladie. Par ailleurs, le respect scrupuleux de ces mesures par les citoyens reste un autre défi. En effet, le mode et le niveau de vie des gens, la faim et la malnutrition due à de multiples chocs, la pauvreté généralisée avec des transactions importantes sur la sécurité alimentaire restent les principales barrières face aux prescriptions gouvernementales. Plusieurs rapports montrent que la région africaine sera confrontée à des perturbations. La perte de revenus pour les personnes travaillant dans le secteur informel en particulier qui survivent souvent grâce à un salaire quotidien, la réduction du revenu des envois de fonds des migrants et la perturbation des systèmes alimentaires (OIT, 2020; ONU-Habitat et PAM, 2020). Ces facteurs créent des tensions pour la sécurité alimentaire.

L'un de défis majeur pour l'humanité a toujours été la sécurité alimentaire. L'accès à cette dernière n'a jamais été aussi important. Comme la pandémie du COVID-19 évolue à travers le monde, la résolution des défis de l'accès à la nourriture est impérative pour les raisons suivantes: le manque de la nourriture peut déclencher des carences en nutriments essentiels et en calories nécessaires pour lutter contre l'apparition de maladies; les aliments de mauvaises qualités peuvent déclencher des problèmes de santé tels que l'obésité, le

[1] Organisation Mondiale de la Santé est une agence spécialisée de l'Organisation des Nations unies (ONU) pour la santé publique créée en 1948. Elle dépend directement du Conseil économique et social des Nations unies et son siège se situe à Pregny-Chambésy, dans le Canton de Genève, en Suisse. Selon la Constitution elle a pour objectif d'amener tous les peuples des Etats membres et partenaires au niveau de santé le plus élevé possible, la santé étant définie dans ce même document comme un « état de complet bien-être physique, mental et social et ne consistant pas seulement en une absence de maladie ou d'infirmité ».

[2] A cause de la pandémie du COVID-19, plusieurs agriculteurs en Afrique de l'Est ont données leur avis. En effet, au Kenya, un répondant affirme que «J'avais l'habitude de vendre des légumes aux écoles et maintenant que les écoles sont fermées, j'ai un problème. Il y a un manque de marché pour les produits de la ferme, et par conséquent, les produits pourrissent à la maison ». De même, certains des répondants en Ouganda ont déclaré que le verrouillage induit par le COVID-19 entravait leurs opérations agricoles par des déclarations telles que; «Cela a réduit mes revenus dans le secteur de la volaille en raison des difficultés à obtenir des aliments et des clients»; «Cela a affecté la surveillance de routine sur notre ferme en raison du manque de moyens de transport autorisés»; et; «Cela a affecté l'accès à des intrants agricoles de qualité» (voir Kansiime et al. 2020).

[3] Afrique Subsaharienne. Malgré sa croissance économique positive, l'ASS continue de faire face à des défis croissants en termes de développement. Par exemple, la région est principalement constituée des pays les moins avancés, avec des faibles indicateurs de développement humain. En effet, 17 pays d'ASS ont été parmi les 20 premiers pays avec un IDH inferieur. Seuls le Gabon, le Mozambique et l'Afrique du sud sont répertoriés comme des pays à IDH élevé (Nkenfgfack et *al. 2019). De plus, 20% des habitants de cette zone étaient sous-alimentés en 2015 et ce chiffre devrait atteindre 22% en 2016 (FAO, FIDA, UNICEF, PAM et OMS, 2017).*

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diabète, et l'hypertension qui peut compromettre le système immunitaire et favoriser par ricochet le développement de certaines maladies. Les Nations Unies ont défini dix-sept stratégies de développement visant à améliorer la qualité de vie des personnes vivant dans différentes parties du monde sous l'appellation des objectifs de développement durable (ODD), à atteindre d'ici 2030 (Workie et *al.* 2020). Par ailleurs, le COVID-19 apparait comme une menace potentielle de retarder ou même d'annuler les progrès accomplis vers l'atteinte des ODD. En effet, les deux objectifs dépendants de la sécurité alimentaire *(c'est-à-dire l'ODD 1- «Pas de pauvreté» et l'ODD 2- «Zéro faim»)* seront durement touchés pendant la période de verrouillage imposée par les gouvernements pour contenir la propagation du virus, en particulier dans les pays en développements. La sécurité alimentaire est l'aspect le plus important et le plus crucial du développement durable (Workie et *al.* 2020). Le COVID-19 est bien plus qu'une maladie infectieuse; il affecte la situation socio-économique et sécurité alimentaire dans le monde[4]. L'impact du virus sur la sécurité alimentaire n'est pas Clair (Elsahoryi et *al.* 2020).

Etant le maillon principal de l'Afrique centrale, évaluer l'impact de cette pandémie sur la sécurité alimentaire reste un défi important pour les autorités camerounaises. L'impact du COVID-19 pourrait menacer la sécurité alimentaire au Cameroun (FAO, 2020). En effet, l'impact du COVID-19 pourrait aggraver l'insécurité alimentaire et affecter plus de 19% de la population totale du Cameroun en impactant la production agricole, comme le souligne Gabriel Mbairobe, Ministre de l'agriculture et du développement rural: *« les stocks des ménages seront fortement entamés dans la zone méridionale, suite à la demande grandissante des zones urbaines et péri-urbaines pendant la période de mars à mai 2020, laissant la situation préoccupante dans certains départements de l'Ouest ».* Le Programme alimentaire mondial (PAM) a estimé que 265 millions d'individus pourraient être touchés par une insécurité alimentaire aiguë d'ici décembre de l'année 2020, soit une augmentation par rapport aux 135 millions d'individus avant la crise (Réseau d'information sur la sécurité alimentaire, 2020).

Par ailleurs, avec la pandémie du COVID-19, les activités ralentissent particulièrement dans le secteur informel[5]. En effet, contrairement aux pays développés, les travailleurs dans le secteur informel au Cameroun n'ont pas la possibilité d'être productif à domicile, les flux de revenus sont moins diversifiés et les systèmes de santé faible. Concernant le secteur public, des missions à l'étranger se voient éliminer et les missions à l'intérieur se voient conditionnés. Par conséquent, les maladies infectieuses de nature pandémique peuvent affecter les ménages, les gouvernements et les entreprises à travers, entre autres, l'augmentation des coûts commerciaux, l'augmentation des dépenses publiques de santé et évolution de l'offre du travail en raison de la mortalité et de la morbidité (McKibbin et Fernando, 2020). Dans le contexte où le COVID-19 et la quarantaine ultérieure pourraient augmenter le risque d'insuffisance alimentaire et agir sur les revenus des ménages au Cameroun, la question qui découle de cette affirmation est la suivante: *quels sont les effets du COVID-19 sur les revenus des ménages et la sécurité alimentaire au Cameroun?*

Depuis l'apparition de cette pandémie, diverses études ont eu à examiner les impacts potentiels du COVID-19 sur les indicateurs économiques mondiaux et nationaux tels que la pauvreté, les inégalités de revenus, la pollution atmosphérique par le CO2, les dépenses publiques, la croissance du PIB, les déficits budgétaires, l'emploi, la sécurité alimentaire, l'agriculture, la chaine des valeurs etc. (Arouna et al. 2020; Elsahoryi et al. 2020; Workie et al. 2020; OIT, 2020; Nicola et al., 2020; Sumner Hoy et Ortiz-Juarez, 2020; ONU-Habitat et PAM, 2020). Cependant, les informations sur la manière dont la pandémie et les stratégies gouvernementales affectent les individus au foyer n'ont pas fait l'objet d'étude au Cameroun. Or, en observant la société camerounaise avant et pendant la crise, le constat qui ressort est que les effets du COVID-19 touchent de façon disproportionnée les membres de la société, en fonction de leur statut, de leurs stratégies de subsistance, et de leur accès aux marchés. Par conséquent, il apparait donc primordial de comprendre les effets possibles de cette pandémie au niveau des ménages à travers leur revenus et leur alimentation et de dégager les stratégies de soutien au pouvoir publique afin d'améliorer la situation.

La suite de cette étude est organisée de la façon suivante. La Section 2 présente les ripostes du gouvernement camerounais face à la pandémie du COVID-19. La Section 3 présente la méthodologie de

[4] De nos jours, environ 820 millions de personnes sont confrontées à la faim chaque jour et plus de deux milliards de personnes manquent de micronutriments vitaux, affectant leur santé et leur espérance de vie (FAO, FIDA, UNICEF, PAM, et OMS, 2019). Les causes profondes de l'insécurité alimentaire sont complexes et multidimensionnelles. Elles sont liées à une série de facteurs étroitement comme la pauvreté, le faible accès aux services sociaux de base et l'insuffisance de certaines politiques publiques (Abdullah et al. 2019).

[5] Pour étayer les effets de la pandémie sur les activités génératrices de revenus, un répondant indépendant au en Afrique de l'Est a fait remarquer: «Depuis les 45 derniers jours de l'épidémie de cette maladie mortelle, tant de personnes sont retournées dans les zones rurales pour se cacher. Cela a affaibli mon entreprise parce que la plupart de mes clients sont partis, et la situation actuelle n'est plus que la survie. Il n'y a pas de mouvement après 19 heures, ce qui réduit l'activité commerciale et donc les revenus. La vie est dure, en général» (voir Kansiime et al. 2020).

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l'étude. La section 4 analyse les résultats et leurs interprétations économiques. L'étude se termine par une conclusion qui s'accompagne des quelques recommandations de politiques économiques (section 5).

II. Ripostes du Gouvernement Camerounais Face a la Pandemie du Covid-19

Le Cameroun est devenu l'épicentre de la pandémie du COVID-19 en Afrique centrale. Les premiers cas ont été détectés à l'aéroport de la capitale, Yaoundé. D'autres ont suivi très rapidement à Douala, la plus grande ville du pays. Malgré les mesures prises rapidement par le gouvernement pour isoler les cas initiaux, dépister et tracer les contacts, la transmission au sein de la communauté s'est emparée. Il est difficile de connaître l'ampleur des transmissions à cause de l'accès limité aux services de test (ONUSIDA, 2020). Conformément aux directives de l'OMS et à la pratique mondiale, le gouvernement camerounais a instauré des mesures du confinement à tenir face à cette pandémie afin de faire face à la propagation du virus.

En effet, le 17 mars 2020, une concertation interministérielle s'est tenue à l'immeuble étoile à Yaoundé à l'effet de faire le point de la situation et d'identifier les actions appropriées à mettre en oeuvre. Au terme de cette rencontre, le Président de la République a instruit les mesures suivantes qui furent ensuite relayées par le Premier Ministre: A compter du mercredi 18 mars 2020 et jusqu'à nouvel ordre les mesures suivantes sont à respecter dans toute l'étendue du territoire nationale, il s'agit de: *(1) les frontières terrestres, aériennes et maritimes du Cameroun seront fermées : tous les vols passagers en provenance de l'étranger sont suspendus, à l'exception des vols cargos et des navires transportant les produits de consommation courante ainsi que les biens et matériels essentiels, dont les temps d'escale seront limités et encadrés; les camerounais désireux de retourner dans leur pays devront prendre l'attache de différentes représentations diplomatiques du Cameroun; (2) la délivrance des visas d'entrée au Cameroun aux différents aéroports est suspendue; (3) tous les établissements publics et privés de formation relevant des différents ordres d'enseignement, de la maternelle au supérieur, y compris les centres de formation professionnelle et les grandes écoles seront fermés; (4) les rassemblements de plus de cinquante personnes sont interdits sur toute l'étendue du territoire national; (5) les compétitions scolaires et universitaires sont reportées, à l'instar des jeux FENASSCO[6] et des jeux universitaires; (6) les débits de boissons, les restaurants et les lieux de loisirs seront systématiquement fermés à partir de 18 heures, sous le contrôle des autorités administratives; (7) un système de régulation des flux des consommateurs sera instauré dans les marchés et les centres commerciaux; (8) les déplacements urbains et interurbains ne devront s'effectuer qu'en cas d'extrême nécessité; (9) les conducteurs de bus, de taxis et de mototaxis sont invités à éviter des surcharges dans les transports publics : les forces de maintien de l'ordre y veilleront particulièrement; (10) les formations sanitaires privées, les hôtels et autres lieux d'hébergement, les véhicules ainsi que les équipements spécifiques nécessaires à la mise en oeuvre du plan de riposte contre la pandémie de la COVID-19 au Cameroun pourront être réquisitionnées en tant que de besoin, à la diligence des autorités compétentes; (11) les administrations publiques devront privilégier les moyens de communications électroniques et les outils numériques pour les réunions susceptibles de regrouper plus de dix personnes; (12) les missions à l'étranger des membres du Gouvernement et des agents du secteur public et parapublic sont suspendues; (13) les populations sont invitées à observer strictement les mesures d'hygiène recommandées par l'Organisation Mondiale de la Santé, à savoir notamment se laver régulièrement les mains au savon, éviter des contacts rapprochés tels que se serrer les mains ou s'embrasser, se couvrir la bouche pour éternuer. En cas de nécessité, les populations sont invitées à appeler le numéro vert 1510 mis en place pour la mobilisation des équipes de secours*[7].

Par ailleurs, les mesures de prévention de COVID-19 telles que le verrouillage, le maintien à la maison, l'arrêt du transport sont très difficiles dans la société camerounaise. Et le confinement total sur l'étendue du territoire nationale n'a pas été prononcé. Au cours de cette crise, le Cameroun comme bon nombre des pays d'Afrique doivent dépendre des paquets d'urgences, qui ne suffiront pas à les protéger à cause de la vulnérabilité de leur population. En raison des verrouillages imposés au niveau des frontières, le secteur des transports a perturbé la chaîne d'approvisionnement pour les dons de biens, en particulier de nourriture (Reardon et al. 2020). En observant l'évolution de cette pandémie en ASS, il en découle que les niveaux de mise en oeuvre des mesures préventives varient pour chaque pays touché par le virus. Cependant, ce papier met en évidence les effets du COVID-19 sur la durabilité, plus particulièrement sur les revenus des ménages et la sécurité alimentaire.

[6] Fédération Nationale des Sports Scolaires

[7] Voir Chazai et Partners, 29 mai 2020 dans «Recueil des mesures prises par le Gouvernement camerounais dans le cadrer de la lutte contre le COVID-19».

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III. Methodologie de L'etude

Dans cette partie de l'étude, nous présentons tour à tour la stratégie d'appropriation de nos données et le modèle d'analyse.

a) La stratégie d'appropriation des données

Dans cette évaluation, les données utilisées ont été collectées à l'aide d'un questionnaire en ligne envoyé à des répondants aléatoires au Cameroun en utilisant les réseaux sociaux en l'occurrence Whatsapp et Facebook et Telegram. En effet, nous suivons Kansiime et al. (2020) dans l'utilisation de cette stratégie d'appropriation des données. Cette procédure est inefficace pour la fiabilité des données mais elle s'avère être la meilleure méthode en présence du processus de distanciation sociale qui ne donnait pas la possibilité d'effectuer les entretiens face à face. Touché par le COVID-19, les effets sur les aliments et les revenus des ménages sont importantes. Notre questionnaire en ligne était ouvert sur une période de 15 jours soit du 17 au 31 mars 2020. Le choix de cette période est dicté par le début des mesures du confinement adopté par le Gouvernement camerounais.

Aux termes de réponses obtenues par les répondants; 303 et 250 personnes respectivement dans les villes de Yaoundé et Douala ont répondues à cette questionnaire. Le nombre total des répondants s'élève donc à 553 personnes. Avant de répondre aux questions, un répondant prit au hasard devrait indiquer sa ville de résidence. Cette stratégie permet de distinguer les répondants des régions qui ont enregistré de cas du COVID-19 des régions qui n'en n'ont pas enregistrés. Par ailleurs, cette technique utilisée pour obtenir des données est trop rapide. Par conséquent, l'échantillon obtenu à la fin n'est pas représentatif. Le Cameroun est l'un pays d'ASS le mieux outillé en technologie de l'information et de la communication (TIC). Il est le premier en Afrique centrale. En outre, il existe des personnes trop instruites en TIC et pouvant manipuler l'enquête en ligne d'une multitude de fois et à leur guise. Donc, il y aura certainement un biais possible dans nos données à causes de cette catégorie des personnes. Néanmoins, la méthode utilisée pour recueillir les données fournit des informations utiles pour comprendre les impacts possibles de la pandémie du COVID-19 en cours sur la sécurité alimentaire et sur les revenus des ménages au Cameroun.

b) Strategie empirique

Afin de mieux apprendre les implications du COVID-19 au Cameroun, rappelons que l'objectif principal de cette étude est d'évaluer les effets du COVID-19 sur le revenu des ménages et la sécurité alimentaire. Pour manque des données fiables, dans le cadre de cette étude, la sécurité alimentaire est mesurée à l'aide de l'échelle de mesure de l'insécurité alimentaire vécue (EMIAV)[8] qui a été développé par l'Organisation des Nations Unies pour l'Alimentation et l'Agriculture (FAO). Dans la littérature sur les indicateurs de la sécurité alimentaire, il existe quatre composantes essentielles de la sécurité alimentaire que sont les volumes disponibles, l'accès à la nourriture, l'utilisation des aliments et la stabilité. L'échelle de mesure de l'insécurité alimentaire vécue est conçue pour mesurer la deuxième composante, l'accès à la nourriture, à partir des informations communiquées par les personnes interrogées, au niveau de l'individu ou au niveau du ménage. En effet, l'échelle de mesure de l'insécurité alimentaire vécue permet d'évaluer la gravité de l'insécurité alimentaire des personnes ou des ménages à partir d'entretiens directs. Cet indicateur mesure les progrès accomplis au regard de la cible 2.1 *(d'ici à 2030, éliminer la faim et faire en sorte que chacun, en particulier les pauvres et les personnes en situation vulnérable, y compris les nourrissons, ait accès toute l'année à une alimentation saine, nutritive et suffisante)* des ODD. L'EMIAV est une mesure basée sur l'expérience du pilier accès à la sécurité alimentaire. En se basant sur la version du module d'enquête sur l'EMIAV (FAO, 2016a), qui se compose de huit courtes questions dichotomique[9], c'est dire des questions dont les réponses sont (oui ou non), nous avons interrogés les individus sur leur situation d'insécurité alimentaire avant la période du COVID-19 et à partir du moment où le gouvernement a lancé le processus du confinement (c'est-à-dire à partir du 17 mars 2020).

À la suite de FAO (2015)[10] et en utilisant la méthodologie récente de Kansiime et al. (2020), trois

[8] Selon FAO (2020), cet indicateur fournit des estimations comparables à l'échelle mondiale de la proportion de la population qui rencontre des difficultés de niveau modéré ou grave en matière d'accès à la nourriture. À partir d'éléments concrets tirés de systèmes de mesure analogues mis en place dans de nombreux pays depuis une vingtaine d'années, on a élaboré, dans le cadre du projet « *Voices of the Hungry* », les protocoles d'analyse nécessaires pour obtenir des estimations valables et fiables sur la population confrontée à l'insécurité alimentaire et pouvoir ainsi faire des comparaisons entre différents pays et entre différentes cultures.

[9] Selon FAO (2015), Huit questions clés liés à la sécurité alimentaire sont:

1. vous avez été inquiet(e) de ne pas avoir assez à manger?
2. vous ne pouviez pas manger des aliments nourrissants et bons pour la santé?
3. vous mangiez presque toujours la même chose?
4. vous avez dû sauter un repas?
5. vous n'avez pas mangé autant qu'il aurait fallu?
6. il n'y avait plus rien à manger à la maison?
7. vous aviez faim mais vous n'avez pas mangé?
8. vous n'avez rien mangé de toute la journée?

[10] 11 Cité par Kansiime et al. (2020) dans Kansiime Monica, Tambo Justice; Mugambi Idah; Mary Bundi Augustine Kara; and Owuor Charles. (2020). COVID-19 implications on household income and food security in Kenya and Uganda: Findings from a rapid assessment. World Development. 10.1016/j.worlddev.2020.105199.

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indicateurs d'insécurité alimentaire ont été construits sur la base de la somme des huit éléments de l'EMIAV. Premièrement, un répondant est considéré comme en situation d'insécurité alimentaire si le score brut est supérieur ou égal à un et zéro dans le cas contraire. Deuxièmement, un score EMIAV brut de quatre ou plus correspond à une insécurité alimentaire modérée ou sévère. Le troisième est un indicateur d'insécurité alimentaire grave qui est égal à un si le score brut EMIAV d'un répondant est de 7 ou 8 et de zéro dans le cas contraire.

Pour évaluer les effets du COVID-19 sur la qualité de l'alimentation, nous avons demandé aux répondants d'indiquer à quelle fréquence ils ont consommé trois groupes alimentaires different avant et pendant la période du confinement. Les groupes alimentaires comprennent les fruits, les légumes, la viande (chèvre, boeuf, mouton, porc….). Ces groupes alimentaires reflètent les aliments riches en micronutriments et les produits alimentaires périssables dont l'accessibilité et la consommation sont susceptibles d'être affectées par la pandémie (Kansiime et al. 2020). Pour chacun de ces groupes d'aliments, les répondants ont choisi parmi trois options de fréquence de consommation: rarement (une ou deux ou trois fois par mois), parfois (4 à 8 fois par mois) et souvent (> 8 fois par mois). Pour chaque groupe alimentaire et chacune des deux périodes (c.-à-d. Avant et à partir du confinement), des variables de consommation fréquentes qui sont égales à un si un répondant sélectionnait "souvent (> 8 fois par mois)" et zéro sinon, ont été calculées.

c) Modèle de régression PROBIT

Comme les données à notre disposition sont quantitatives, nous utilisons des statistiques descriptives. En effet, pour mettre en évidence les caractéristiques économiques et sociales des répondants et la manière dont la pandémie du COVID-19 a affecté leurs activités génératrices de revenus, leur alimentation, ainsi que leur technique d'adaptation, les statistiques descriptive comprennent les fréquences, les moyennes, les écarts-types et le t-test. Par ailleurs, pour estimer si la source de revenu d'un répondant a été affectée par le COVID-19 et si l'alimentation s'est détériorée par la pandémie, en suivant Kansiime et al. (2020), le modèle de régression PROBIT suivant est utilisé:

Cela peut être exprimé comme suit:

$$Y_i = \psi_i + \beta Sr_i + \lambda Rm_i + \gamma A_i + \xi_i \quad (1)$$

Dans cette spécification, Yi représente le revenu du répondant. C'est une variable de résultat binaire pour le répondant i. Dans le cadre de cette analyse, trois régressions probit différentes ont été estimées:

- Premièrement, Y prend la valeur de 1 si la source régulière de revenu d'un répondant a été affectée par la pandémie COVID-19 et de 0 dans le cas contraire.
- Deuxièmement, Y est égal à 1 si un répondant a connu une détérioration de la sécurité alimentaire (c'est-à-dire que la différence entre le score EMIAV brut d'un répondant pendant le COVID-19 et les périodes normales est supérieure à zéro) et 0 sinon.
- Enfin, Y prend la valeur 1 si un répondant a réduit la fréquence de consommation d'un groupe alimentaire spécifique en raison du COVID-19 et 0 sinon.

Sr et *Rm* sont deux principales variables d'intérêt et désignent respectivement la principale source de revenu et le revenu mensuel du répondant. β et λ sont leurs paramètres respectifs à estimer. Ainsi, l'étude s'est particulièrement concentrée sur la manière dont différentes activités génératrices de revenus et groupes alimentaires sont affectés par les perturbations économiques induites par le COVID-19 au Cameroun. A est un vecteur d'autres variables explicatives. Parmi ces variables explicatives se trouve le sexe, la catégorie d'âge et le niveau d'éducation du répondant, la taille du ménage, le fait qu'il exerce dans le secteur informel, le fait que le répondant soit le chef de la famille, le fait que l'agriculture soit son principal source de revenu, le fait que le répondant appartienne à des groupes d'épargne et à la CNPS[11]. γ est le vecteur associé de paramètres à estimer, et ξ est le terme d'erreur.

IV. Resultats et Interpretations

Dans cette partie, nous présentons d'abord les caractéristiques socioéconomiques des répondants. Par la suite nous analysons les effets du COVID-19 sur le revenu des ménages et la sécurité alimentaire au regard de certaines questions posées aux répondants. Et enfin nous présentons les résultats de la régression du modèle PROBIT les interprétations qui en découlent.

[11] Caisse Nationale de la Prévoyance Sociale du Cameroun

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a) *Caractéristiques socio-économiques des répondants*

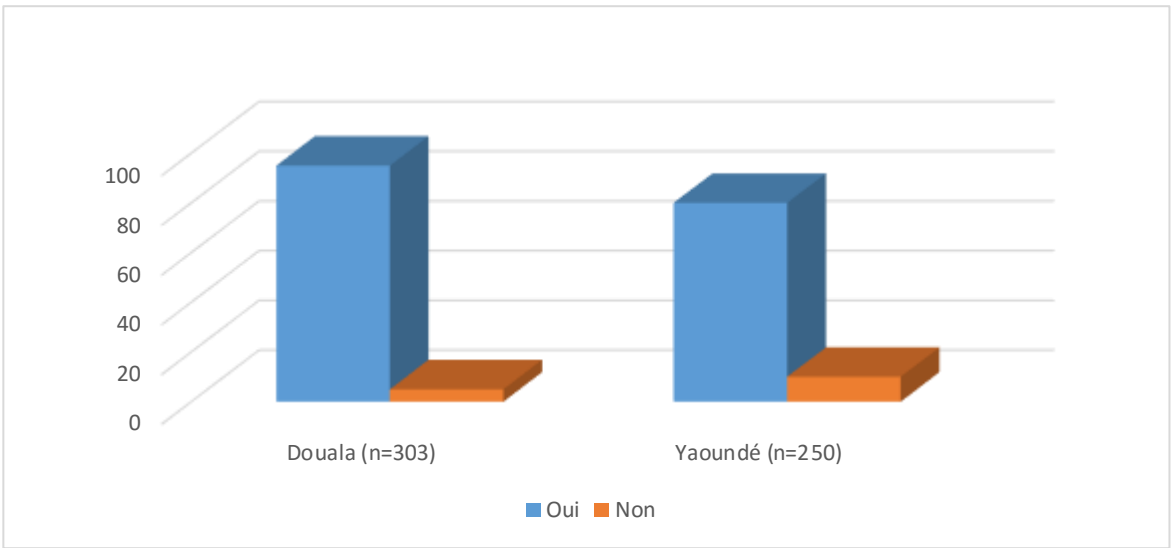
Tableau 1: Statistiques descriptives des caractéristiques socio-économiques des répondants

Caractéristiques du répondant	% favorable	Reste
Sexe (1= homme)	0.85	0.15
Niveau d'Age (1=adule, 0=jeune)	0.75	0.25
Niveau d'éducation (1=supérieur)	0.95	0.05
Taille du ménage (supérieur à 5=oui)	0.10	0.90
Répondant est chef de famille (1=oui)	0.65	0.35
Répondant affilié à la CNPS (1=oui)	0.15	0.85
Agriculture comme activité	0.25	0.75
Emploi salarié	0.30	0.70
Secteur informel	0.30	0.70
Répond gagne par mois: Entre 25000-30000		
Entre 60000-100000	0.45	0.55
Entre 100000-500000	0.85	0.25
	0.15	0.85

Source: auteur à partir des données recueillis en ligne

Le tableau 1 présente les statistiques descriptives des caractéristiques socio-économiques des répondants camerounais. Il apparait que dans ce pays, 85% des répondants aux questions sont des hommes. Ce qui nous permet d'envisager si le répondant est chef de famille ou non. En effet, il apparait que 65% des répondants sont des hommes. Il importe de relever que 75% des répondants étaient des adultes c'est-à-dire âgés de 18 à 35 ans. Vu la difficulté des manipulations de la TIC, 95% des répondants ont un niveau d'éducation supérieure. Cela n'est pas surprenant, étant donné que les données ont été collectées via des enquêtes en ligne, et donc susceptibles d'être remplies par des personnes éduquées qui sont plus susceptibles d'avoir accès à Internet, de posséder un smartphone, d'appartenir à des plateformes de médias sociaux et de comprendre les questions sans assistance. 15% des répondants sont souscrits à la CNPS. Par ailleurs, 25% des répondants ont pour activité l'agriculture comme principale génératrice de leur revenu. Les étudiants et chercheurs d'emploi maitrisent la manipulation des réseaux sociaux, ce qui justifie le nombre élève des répondants ayant un revenu compris entre 25-30 milles le mois (45%).

b) *Effet du COVID-19 sur les activités génératrices de revenus et sur l'alimentation*



Source: auteur à partir des données recueillis en ligne

Graphique 1: Impact du COVID-19 sur les sources de revenus

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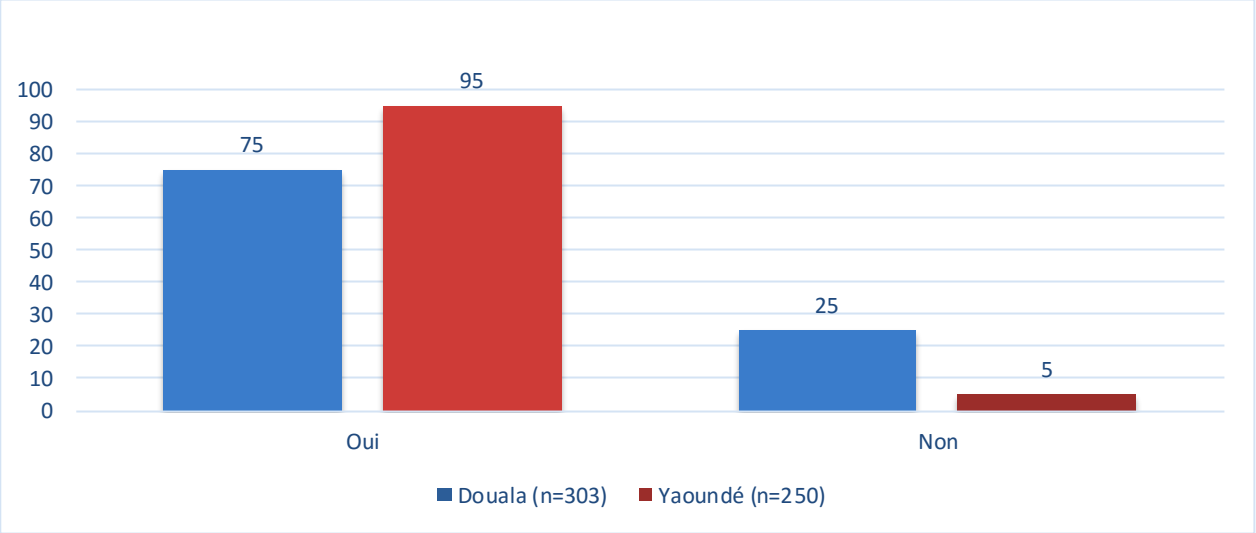
On a demandé aux répondants dans les deux villes du Cameroun (Douala et Yaoundé) si la pandémie du COVID-19 avait affecté leur source régulière de revenus. Les réponses obtenues à l'issu de cette interrogation sont résumées dans le graphique 1. En effet, environ 90% des répondants dans la ville de Douala ont affirmé que la pandémie avait affecté leur source régulière de revenus. Dans la ville de Yaoundé, environ 80% des répondants confirment que la pandémie a affecté leurs activités génératrices de revenus. Ceci est cohérent avec les perceptions répandues concernant les impacts négatifs de la crise du COVID-19 sur les emplois et les revenus (Kansiime et al. 2020).

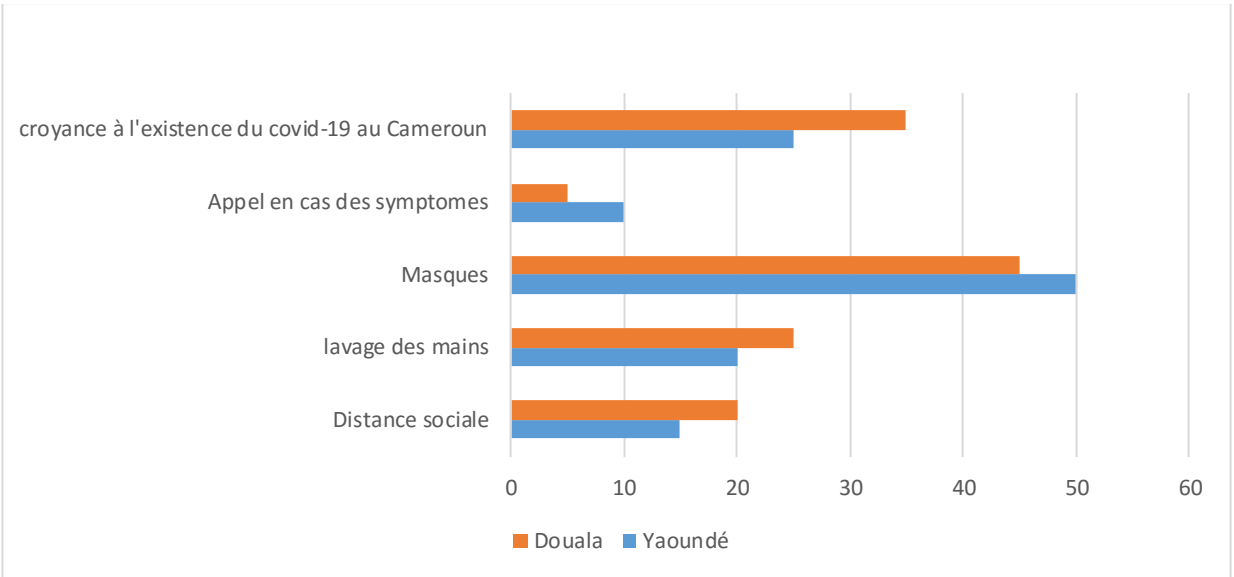


Source: auteur à partir des données recueillies en ligne

Graphique 2: Impact du COVID-19 sur la sécurité alimentaire

Par ailleurs, nous avons demandé aux répondants si la pandémie du COVID-19 avait affétée leur alimentation. Les réponses obtenues sont récapitulé dans le graphique 2. En effet, il apparait à la lumière de ce graphique que 95 et 75% des répondants respectivement dans les villes de Yaoundé et Douala ont affirmé que la pandémie du COVID-19 avait affecté leur alimentation.

Les mesures prises par le gouvernement camerounais pour amortir les effets néfastes sur le revenu de la crise du COVID-19 sont résumés sur le graphique 3.



Source: auteur à partir des données recueillies en ligne

Graphique 3: Respect des measures gouvernementales

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En effet, à la question de savoir si le répondant croit réellement à l'existence du COVID-19 au Cameroun, il apparait que 25% et 35% des répondants respectivement à Yaoundé et Douala ont affirmés que la pandémie est inexistante. Les mesures barrières édictés par le gouvernement sont aussi pour la plupart des répondants non respectés par la population. En effet 45 et 55% des répondants à Douala et Yaoundé respectivement pensent que l'utilisation de masques est respectée au Cameroun. 20 et 25% des répondants à Yaoundé et Douala respectivement pensent que le lavage des mains est respecté par les camerounais. Par ailleurs, la distanciation sociale instauré par le MINSANTE et l'OMS apparait non respecté à la lettre par les camerounais. En effet, seulement 10 et 20% de des répondants à Yaoundé et Douala respectivement pensent que la distanciation sociale d'un mètre est respectée entre les personnes. Et en fin, en cas des symptômes seulement 15% des répondants au totale affirment qu'ils n'appelleront pas le centre d'urgence agrée pour COVID-19. Ce résultat peut se justifié par l'affirmation d'un des répondants en ligne: *« on connait notre pays, même les symptômes de la grippe, ils vont te confiné chez eux pendant une semaine alors que tu n'as pas corona virus.. ».*

c) Resultats de l'estimation du modèle PROBIT

Le tableau 2 suivant donne les récapitulatifs des résultats de l'estimation du modèle (1). En effet, il s'agit de l'estimation du modèle PROBIT sur les facteurs susceptibles d'affecter la sécurité alimentaire et les sources de revenus de ménages au Cameroun.

Tableau 2: Récapitulatifs des résultats de l'estimation du modèle PROBIT

Caractéristiques	Revenu des ménages	Sécurité alimentaire
Sexe (1=Homme)	0.55**	0.258*
	(0.226)	(0.001)
Niveau d'Age (1=Adulte)	0.006*	-0.369***
	(0.004)	(1.245)
Niveau d'éducation (1=supérieure)	-0.024*	-0.017*
	(0.002)	(0.015)
Taille de ménage (Sup à 5=Oui)	-0.002**	0.032***
	(0.51)	(2.955)
Répondant affilié à la CNPS (1=oui)	-0.04***	0.014
	(1.32)	(9.589)
Agriculture comme principale activité	0.551*	0.601**
	(0.004)	(0.157)
Emploi salarié	-0.452***	0.065***
	(7.815)	(8,1425)
Répondant appartient à un groupe d'épargne	-0.024*	-0.125**
	(0.047)	(0.215)
Secteur informel	-0.0142*	-0.129*
	(0.14)	(0.147)
Salaire mensuel (en milliers de franc CFA)		
25-50	-0.085*	-0.060*
	(0.015)	(0.025)
60-100	-0.029**	-0.0367**
	(0.18)	(4.654)
100-500	-0.015*	-0.0164*
	(0.001)	(0.07)
Nombre des observations	553	553

*Source: auteur. Note: ***, **,* représente respectivement la significative à 1%, 5%, et 10%.*

d) Interpretations des résultats

Le tableau 2 présente les résultats de l'estimation PROBIT sur les facteurs qui déterminent si la source régulière de revenu d'un répondant et la sécurité alimentaire ont a été affectés par la pandémie de COVID-19 au Cameroun. Les résultats montrent que les hommes interrogés étaient 55% plus susceptibles que les femmes interrogées de déclarer que leur source de revenus a été affectée par la crise du COVID-19. Par ailleurs, 25% des hommes étaient susceptibles d'affirmé que leur sécurité alimentaire est biaisé par la pandémie du COVID-19 au Cameroun. Cela s'explique en partie par le fait qu'un pourcentage significativement plus élevé d'hommes interrogés étaient impliqués dans de multiples activités génératrices de revenus et sont les patrons de la maison, et, à ce titre, étaient confrontés à de multiples chocs de induits par le COVID-19. La conclusion concorde avec Kansiime et al. (2020), qui

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soutiennent que les impacts du COVID-19 sur le marché du travail sont disproportionnellement plus importants pour les hommes que pour les femmes. L'appartenance à la caisse nationale de la prévoyance sociale était significativement corrélée à une réduction de 4% de la probabilité que le revenu d'un répondant soit touché par la pandémie COVID-19. Ce résultat faible en pourcentage s'explique par le nombre très limités des répondants affiliés à la CNPS. Par ailleurs, cette appartenance est positivement corrélée à une hausse de 1% de la probabilité que la sécurité alimentaire d'un répondant soit affectée par la pandémie. Ce résultat montre que l'appartenance à la CNPS a un effet significatif sur la réduction de la l'insécurité alimentaire pendant la crise du COVID-19. Par ailleurs, cette affiliation est limitée à certains travailleurs salariés.

Par ailleurs, les résultats ont montré que, contrairement aux répondants ayant pour principale activité l'agriculture, les travailleurs salariés étaient environ 45% moins susceptibles de subir des effets négatifs sur leur source de revenu. De l'autre côté, l'emploi salarié est à 65% moins susceptible de subir les effets négatifs du COVID-19 sur la sécurité alimentaire. De même, les travailleurs dans le secteur informel et ceux qui appartiennent à certaines groupes d'épargnes respectivement 1% et 2% moins de chances de signaler un impact de la crise du COVID-19 sur leur source régulière de revenus, par rapport aux agriculteurs et au travailleur salarié. Ces résultats montrent également que l'agriculteur est susceptible de subir les effets de la pandémie sur sa sécurité alimentaire à hauteur de 60% comparativement au travailleur salarié qui est de 6%. Et l'agriculture est à 55% plus susceptible de subir les effets négatifs du COVID-19 sur son source de revenu.

Les résultats indiquent également que les activités rémunératrices de personnes interrogées étaient plus susceptibles d'être affectées par la pandémie en tenant compte de la fourchette des salaires. En effets, les personnes interrogées dont les revenus mensuels varient entre 25 et 50 milles et ceux entre 60 et 100 milles sont 8%% et 2% moins susceptibles de déclarer que la crise du COVID-19 affectait respectivement leurs sources de revenus régulières. Les répondants dont les salaires mensuels sont compris entre 100 et 500 milles sont à 1% moins susceptibles d'être affectés par la pandémie du COVID-19. Ainsi, il y avait une relation négative significative entre l'augmentation du revenu et la probabilité de faire face aux risques de revenu induits par le COVID-19. Ce résultat concorde avec celui de Kansiime et al. (2020) en Afrique de l'Est (Kenya et Uganda).

En effet, il se dégage des résultats que les répondants ayant un revenu relativement élevé étaient plus susceptibles de compenser les risques de revenu liés à la pandémie que les répondants plus pauvres. Par ailleurs, ces résultats montrent également que les répondants ayant un revenu entre 25-50 milles, 60-100 milles et 100-500 milles étaient respectivement 6%, 3% et 1% moins susceptibles de subir les effets du COVID-19 sur leur sécurité alimentaire. Ce résultat stipule que le répondant ayant un revenu relativement plus élevé était susceptible de compenser les risques d'insécurité alimentaires liée à la pandémie du COVID-19 par rapport à un répondant ayant un revenu faible.

V. Conclusion et Recommandations de Politique Economique

Cette étude s'est donnée pour principal objectif d'évalué les effets du COVID-19 sur les revenus des ménages et la sécurité alimentaire au Cameroun. Ce dernier à travers son gouvernement a instauré des mesures barrières face à cette pandémie qui continue de faire des dégâts sur le plan social à travers le monde. Les données utilisées ont été collectées à l'aide d'un questionnaire en ligne envoyé à des répondants aléatoires au Cameroun en utilisant les réseaux sociaux en l'occurrence Whatsapp et Facebook et Telegram. Pour la méthodologie utilisée, l'étude a suivie Kansiime et al. (2020) surtout dans l'utilisation de la stratégie d'appropriation des données. Cette procédure a paru inefficace pour la fiabilité des données mais elle s'est avérée être la meilleure méthode en présence du processus de distanciation sociale qui ne donnait pas la possibilité d'effectuer les entretiens face à face. Pour arriver à nos résultats, les statistiques descriptives et un modèle de régression PROBIT sont utilisés à travers des réponses obtenus des répondants en ligne. Les résultats obtenus montrent qu'il y a eu détérioration des sources de revenus et de la qualité alimentaire des répondants au Cameroun au cours de la période du COVID-19 par rapport à la période d'avant. Ceci s'est manifesté par la réduction des revenus, la réduction de l'accès aux marchés en raison des restrictions de voyage et du faible pouvoir d'achat. Par ailleurs, il apparait que les agricultures sont beaucoup plus susceptibles de subir les effets négatifs de la pandémie sur leur source de revenu et sur leur alimentation par rapport aux autres catégories des personnes. Au Cameroun, 85% des répondants pensent que le COVID-19 a impacté leur situation alimentaire et leur source de revenu. Ceci se justifie par le non-respect des mesures barrières édictés par le gouvernement conformément à l'OMS. En effet, certains Camerounais pensent encore que cette pandémie n'existe pas, ou du moins ne pas encore d'actualité au Cameroun. Il ressort également que l'appartenance à la CNPS a un effet significatif sur la réduction de l'insécurité alimentaire pendant la crise du COVID-19. Par ailleurs, cette affiliation est limitée à certains travailleurs salariés.

Pour faire face aux effets néfastes du COVID-19 sur les revenus et sur l'accès à la nourriture des recommandations qui ressortent des résultats de cette étude sont les suivantes: Le Gouvernement

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camerounais doit mettre en oeuvre des modifications au niveau des régimes de sécurité sociale. Par ailleurs, il doit mettre en place des systèmes fiables qui aurons pour objectif principal de garantir le suivie dans les chaînes d'approvisionnement alimentaire en biens et services sur toute l'étendue du territoire, et en particulier dans les zones qui ont enregistrés des cas. Un appui financier au secteur agricole serait un atout pour la population camerounaise.

References Bibliographiques

1. Abdullah Zhou D., Shah T., Ali S., Ahmad W., Din I. U. and Ilyas A. (2019). Factors affecting household food security in rural northern hinterland of Pakistan. *Journal of the Saudi Society of Agricultural Sciences,* 18, 201–210.
2. Adda J. (2016). Economic activity and the spread of viral diseases: evidence from high frequency data, *Qauterly Journal of Economics.* 131, 891–941.
3. Elsahoryi Nour; Hiba Al-Sayyed; Mohanad Odeh; Andrea McGrattan; and Fwziah Hammad (2020). Effect of Covid-19 on food security: A cross-sectional survey, *Clinical Nutrition ESPEN,* 40, 171-178.
4. FAO (2015). Modeling food insecurity in bivariate and regression analyses, guidelines prepared by the voices of the hungry team. Rome Italy: FAO.
5. FAO (2016a). Global food insecurity experience scale survey modules <http://www.fao.org/3/a-bl404e.pdf>.
6. FAO (2020). COVID-19 pandemic - impact on food and agriculture. Food and Agriculture Organization of the United Nations (FAO), Rome Italy.
7. FAO; IFAD; UNICEF; WFP and WHO (2019). The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns. Rome: FAO. Licence: CC BY-NC-SA 3.0 IGO.
8. FAO (2020). Coronavirus disease 2019 (COVID-19) - addressing the impacts of COVID- 19 in food crises. Available from: http://www.fao.org/emergencies/appeals/ detail/en/c/1270012/.
9. FAO (2020). prévisions%2C%20de%20juin,la%20population%20totale%20du%20Cameroun http://www.fao.org/cameroun/actualites/detailevents/fr/c/1273570/#:~:text=Selon%20ces%20
10. FAO; IFAD; UNICEF; WFP and WHO (2017). The State of Food Security and Nutrition in the World 2017. Building Resilience for Peace and Food Security. Rome, FAO.
11. Huang C., Wang Y., Li X., Ren L., Zhao J., Hu Y. and al. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. Lancet 395, 497–506. https://doi.org/10.1016/S0140-6736(20)30183-5.
12. ILO (2020). COVID-19 and the world of work: Impact and policy responses. ILO Monitor (1st Ed.). Geneva: International Labour Organization.
13. Kansiime Monica, Tambo Justice, Mugambi Idah; Mary Bundi; Augustine Kara; and Owuor Charles. (2020). COVID-19 implications on household income and food security in Kenya and Uganda: Findings from a rapid assessment. *World Development.* DOI.10.1016/j.worlddev.2020.105199.
14. McKibbin W. J. and Fernando R. (2020). The global macroeconomic impacts of COVID-19: Seven scenarios. <https://papers.ssrn.com/sol3/papers.cfm? abstract_id=3547729>.
15. Muhammad S., Long X. and Salman M. (2020). COVID-19 pandemic and environmental pollution: a blessing in disguise? Science *Total Environmental.* 728, 138820. https://doi.org/10.1016/j.scitotenv.2020.138820.
16. Nicola M., Alsafi Z., Sohrabi C., Kerwan A., Al-Jabir A., Iosifidis C. and Agha R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): *A review International Journal of Surgery,* 78, 185–193. https://doi.org/10.1016/j.ijsu.2020.04.018.
17. Nkengfack H., Kaffo Fotio H. and Temkeng Djoudji S. (2019). The Effect of Economic Growth on Carbon Dioxide Emissions in Sub-Saharan Africa: Decomposition into Scale, Composition and Technique Effects. *Modern Economy,* 10, 1398-1418.
18. ONUSIDA (2020). Gérer l'épidémie du covid-19 au Cameroun. Document disponible en ligne sur: www.unaids.org/fr/resources/presscentre/featurestories/2020/may/20200511_covid19cameroon.
19. Reardon T., Bellemare F. M. and Zilberman D. (2020). How COVID-19 may disrupt food supply chains in developing countries. IFPRI Blog. Washington, DC: IFPRI.
20. Siche R. (2020). What is the impact of COVID-19 disease on agriculture? *Scientia Agropecuaria,* 11(1). https://doi.org/10.17268/sci.agropecu.2020.01.00.Trujilloene.
21. Singhal T. (2020). A review of coronavirus disease-2019 (COVID-19). *Indian Journal of Pediatrics,* 87, 281–286.
22. Sumner A., Hoy C. and Ortiz-Juarez E. (2020). Estimates of the Impact of COVID-19 on Global Poverty. UNU-WIDER Working Paper 2020/43.s.
23. Torero M. (2020). Without food, there can be no exit from the pandemic. *Nature,* 580, 588–589.
24. UN-Habitat and WFP. (2020). Impact of COVID-19 on livelihoods, food security and nutrition in East Africa: Urban focus. Retrieved September 1, 2020, from "https://unhabitat.org/sites/default/files/2020/08/wfp-0000118161_1.pdf".

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25. Workie Endashaw, Joby Mackolil, Joan Nyika and Sendhil Ramadas. (2020). Deciphering the impact of COVID-19 pandemic on food security, agriculture, and livelihoods: A review of the evidence from developing countries, Current Research in Environmental Sustainability 2 (2020) 100014.
26. World Health Organization (2020). Coronavirus Disease (COVID-19): Situation Report-139. https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200607- covid-19-sitrep-139.pdf (accessed 10 June 2020).

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Economic and Sustainability Analysis of Renewable Energy in India

By Swapnil Soni & Varurn Jyothiprakash

Abstract- Energy consumption, economic growth, and climate change are the three vertices of the 'energy trilemma' of the Indian economy. In the path of development, India has the challenge to produce energy and mitigate carbon emissions maintaining a pace of development of society, economy, and ecology, holistically known as sustainable development. The present study analyses the adoption and promotion of renewable energy and technology in India from an economic and sustainability perspective using qualitative and quantitative frameworks and empirical data. Correlation analysis of growth indicators reveals the increased contribution of renewable energy in the nation's energy and electricity access to nationals' tread in tandem. The time series trend of India's growth indicators supports the argument that renewable energy not only contributes to the mitigation of carbon emission but also strengthens the economic growth by inviting investments, enhancing the trade basket, and generating employment opportunities.

Keywords: *renewable energy, economic development, sustainability.*

GJHSS-E Classification: *FOR Code: 149999*



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Economic and Sustainability Analysis of Renewable Energy in India

Swapnil Soni [α] & Varurn Jyothiprakash [σ]

Abstract- **Energy consumption, economic growth, and climate change are the three vertices of the 'energy trilemma' of the Indian economy. In the path of development, India has the challenge to produce energy and mitigate carbon emissions maintaining a pace of development of society, economy, and ecology, holistically known as sustainable development. The present study analyses the adoption and promotion of renewable energy and technology in India from an economic and sustainability perspective using qualitative and quantitative frameworks and empirical data. Correlation analysis of growth indicators reveals the increased contribution of renewable energy in the nation's energy and electricity access to nationals' tread in tandem. The time series trend of India's growth indicators supports the argument that renewable energy not only contributes to the mitigation of carbon emission but also strengthens the economic growth by inviting investments, enhancing the trade basket, and generating employment opportunities.**

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I. Introduction

Energy is the driver of growth for an economy. For a developing economy, energy plays a vital role to run the gear of structural change and reap the effect of this structural change in the economy. Sen has defined energy as 'capability' for societal development (Rosie et al., 2016). The consistent contribution of energy towards the development of society, economy, and ecology yields a sustainable and overall development of the nation. The definition of consistency in contribution can be well understood in the context of renewable energy resources and technologies. By the definition itself, the renewable energies are everlasting due to its very nature of renewability. The salient features of these energy sources are they everlasting and readily available in nature. The major renewable energy sources are solar, wind, hydro, biomass, tidal, and geothermal energy, etc. However, the utilization of these forms of renewable energy sources mainly depends on the availability of these energies as per geographic location and also the technology required for extracting these energy sources into useful energy sources. The everlasting characteristics of renewable energy sources assure the constancy of their contribution to the growth of the economy. It is with this backdrop that this study has been undertaken to diagnose the role of renewable energies and technologies in the development of the Indian economy.

India has been witnessing a fast pace of economic structural change and economic growth for last three decades with Gross Domestic Product (GDP) growth rate averaging around 6% (World Bank databank).[1] In the process of economic and occupational structural change and growth, India has exhibited significant industrialization especially post-liberalization, 1991. The economic development is majorly driven by the development of industries and infrastructures on one-hand at the macro-level and the uplifting of living standards of individuals on the other at the micro-level by improved access to transportation, cooking fuel, comfort heating or cooling, and access to modern energy services, etc. Both, at macro-and micro-levels, energy and energy services invariably play a governing role.[2]

a) India Energy Scenario

India is the second-largest populated country in the world with a population of 1.3 billion (Worldometer, n.d.). Currently, the country is the third-largest consumer of electricity in the world with the annual consumption of 1,389.21 TWh in 2019-20, where the thermal energy sources contribute to 62.1% of the total electricity generation (Government of India, 2020). The county is the third-largest emitter of CO2 from fuel combustion with 2,222 MtCO2 in 2019 (Enerdata, 2020). India's CO2 emissions grew at a Compound Annual Growth Rate (CAGR) of 5.8% from 1990 to 2019 (Enerdata, 2017). At the national level, the Government of India (GOI) has a voluntary pledge of reducing the emissions intensity of GDP by 20 to 25% over 2005 levels by 2020 and 33 to 35% by 2030. GOI has recently enhanced its target to have 175 GW of power from renewable sources by 2022 and 40% of cumulative installed electric power capacity by 2030. The country has targeted to create a carbon sink of 2.5-3 GtCO2e through additional forest and tree cover by 2030. India is one of the fast-growing economies of the world (Government of India, 2016). The country's rapid increase in overall income has increased the demand for electricity. India has assigned

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[1] World Bank databank <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2016&locations=IN&start=1987>

[2] Energy refers to energy sources and energy carriers such as fuel, electricity and LPG; whereas, energy services refers to the services or utilities derived out of energy carriers such as transportation, cooking and illumination etc.

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the role of overseeing the implementation of 17 Sustainable Development Goals (SDG) through central ministry, where they have formed a nodal agency NITI Aayog to ensure the functioning and operations of SDG across India.

India is the third-largest producer and consumer of electricity in the world with the annual consumption of 1389.21 TWh and an installed capacity of 372 GW in 2019-20 which is roughly one-third of the World's average consumption (CEA, 2020; IEA, 2016). Figure 1 shows the pictorial representation of India's electricity generation capacity mix. Conventional source (coal, gas, oil) of energy are the major contributors in India's current energy mix with 62.1 % (231,421 MW) followed by Renewable Energy sources 23.8 % (87,027 MW), Large Hydro 12.3 % (45,699 MW) and Nuclear 1.8 % (6,780 MW) (Government of India, 2020). In the Renewable Energy Sources, the wind energy source is predominant with 42.8 % (37999.5 MW) followed by Solar Energy 40.2 % (35,739.3 MW), Bagasse and Cogeneration 10.6 % (9373.8 MW), Small Hydro Power 5.3 % (4739.9 MW), Biomass/Captive Power 0.9 % (772 MW) and Waste to Power 0.2 % (168.6 MW) (Ministry of new and renewable energy, 2019).

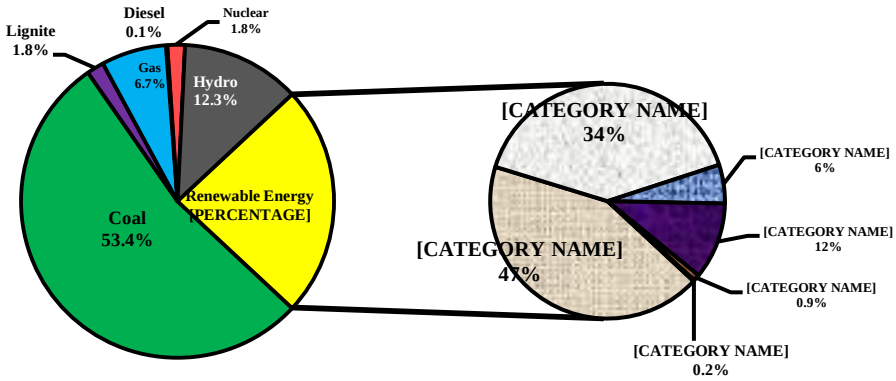

Figure 1: Electricity Generation Mix

As seen from the above figure the coal is a major energy source for India which is a non-renewable. In the criteria of '*accessibility*', '*affordability',* and '*availability*', the fossil fuels (Coal) have made their distinguished place but measurably failed to meet the criterion of '*acceptability'* due to heavy GHG emissions which in turn damages the environment.[3] Currently, India imports 48.8% of coal which adds to the international trade issue and cost to the county (Ministry of Coal, 2020; Ministry of Statistics and Programme Implementation, 2020). Renewable energy comes with a boon to tackle this issue of environmental sustainability but bears the question of availability, reliability, accessibility, and affordability. For instance, solar energy in India is renewable and environmentally acceptable but has the concern of availability round the clock and lack of indigenous manufacturing of solar panels, making the country dependent on neighboring countries that hamper the trade balance.[4]

Also, the development with consumption of conventional energy resources engenders concerns of environment and sustainability challenges. On the cost of environmental concerns and sustainability, India cannot forego the development of an economy that results in the wellbeing of the society at large. Investment in, adoption, and development of renewable energy pave the path to tread the way of development maintaining sustainability in the eco-system.

The promotion of renewable energy leads to sustainable economic development that in turn leads to investment in renewable energy further. This is phrased as a 'feedback relationship'. The literature advocates the positive feedback relationship between the development of renewable energy and the economy in most of the industrial economies (Nicholas, 2014). This present study probes into such a relationship in Indian contexts and provides policy recommendations.

II. Literature Review

The short and long run relationship between renewable energy investment and economic growth have been analyzed in many developing and developed economies. Nicholas' work (2014) established a strong relationship between renewable energy consumption and economic growth using empirical analysis of 80 countries. The study proves that renewable energy is important for economic growth which further encourages the use of more renewable energy sources. The presence of causality provides an avenue to continue the use of government policies that enhance the development of the renewable energy sector. Sari and Soytas (2008) estimate an ARDL (Auto-Regressive Distributed Lag) model with respect to disaggregated

[3] A sustainable energy is defined by the criteria of 'availability' (adequacy of supply), 'accessibility' (accessible to all consumers of society), 'affordability' (cost-effectiveness of energy source) and 'acceptability' (eco-friendly fuel).

[4] India's 87 per cent solar cell is imported from China (neighbor) <http://indianexpress.com/article/india/indias-87-per-cent-solar-cell-imports-from-china-in-april-september-piyush-goyal-4417312/>

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measures of U.S. renewable energy consumption and find that industrial production has a positive impact on renewable energy consumption. In a sectoral analysis of renewable energy consumption, Bowden and Payne (2010) show unidirectional causality from residential renewable energy consumption to the real output, while the absence of a causal relationship between commercial and industrial renewable energy consumption and real output, respectively. Tugcu (2013) investigates the long- and short-run relationships between disaggregate energy consumption and total factor productivity growth in the Turkish economy. His study highlights that disaggregate energy consumption is co-integrated into total factor productivity growth and there exists a bi-directional causal relationship among the variables. Leitao (2014) also investigates the correlation between economic growth, carbon dioxide emissions, renewable energy, and globalization. His results document that there is a strong and positive link between renewable energy and economic growth.

Economic development has a dimension of occupational structure and employment that also seems to have a significant influence on renewable energy technologies. International Renewable Energy Agency (IRENA, 2016) report indicates that the creation of jobs doubles due to solar energy generation with respect to the conventional energy generation. The report underscores the role of renewable energy in making energy cost-effective, reliable, secure and environmentally sustainable that result in economic development. The impact of renewable energy has been predicted to be +0.2% to +4.0% in GDP. The literature also considers the fact that the invasion of new and renewable energy technologies negatively impacts the employment in conventional energy sectors, yet the positive impacts created by this new arena of renewable energy nullify the negative impact and produce overall beneficial outcomes for the economy in long run.

With literature review and analysis, this study further examines the scenario of renewable energy in the context of the Indian economy. The following section 3 and section 4 highlight the economic and sustainability analysis using the qualitative and quantitative framework. Section 5 summarizes the results, policy implications, and suggests the way forward.

III. Economic Analysis

The optimum utilization of resources by the productive sectors generating employment is responsible for economic and occupational structural changes and results in economic growth (Kuznets, 1955). There is always a shift of employment and value-added from low to high productive sectors which are termed as 'structural change'. The bonus of this structural change, if properly and timely reaped, results in economic growth. In the process of development, it becomes vital for a country to shift its reliance on energy from convention to new and renewable energy sources and technology. This shifting process generates employment opportunities with moderate frictional and structural unemployment, in the short run, that are components of the natural rate of unemployment. However, in the long run, the benefits are immense in terms of qualitative and quantitative dimensions of the economy of a developing country.

The energy sector contributes to economic activity in two ways. Firstly, energy is an important economic sector that creates jobs and values by extracting, transforming, and distributing energy goods and services throughout the economy (World Economic Forum, 2012). Secondly, there exists strong linkages between energy sector and other industries that need energy to power their machinery and associated facilities. Energy is input to nearly every product and service in the economy and supoorts the economic activities across each of its productive sectors. Thus, the energy sector's impact ripples through the rest of the economy. Some of the major contributors to such expected growth can be envisaged as increased trade of renewable technologies and equipment, infrastructural investment, employment generation, and opened arena for Foreign Direct Investment (FDI), etc. Whereas, the developing countries like India have the potential to welcome opportunities for investment and development of renewable energy and technologies. India's export basket is currently outweighed by food products, basic consumer goods, and low technology products resulting in a volume-heavy but value-light basket (Bala, 2014). This causes the issues in trade balance and negatively impacts the GDP of India that is constituted by consumption, investment, government expenditure, and net exports. The introduction of high technology products meant for renewable energy technologies such as wind turbines, solar panels, and small hydro turbines, etc. into the export basket will not only enhance the value of the export basket but also contribute to maintaining the desired trade balance resulting in sustainable economic growth. IRENA (2016) quantifies this positive impact of investment in renewable energy to be 2.4% growth in GDP.

To empirically diagnose the relationship between usage of renewable energy in terms of electricity production and other economic factors- GDP and access to electricity and environmental factor- CO_2 emission, the study analyses 33 major countries in the world using last 7 years' data from 2010through 2016.[5]

[5] Data bank of World Bank <http://databank.worldbank.org/data/reports.aspx?Code=IND&id=556d8fa6&report_name=Popular_countries&populartype=country&ispopular=y> Major 33 countries considered for the analysis: Afghanistan, Argentina, Austria, Bangladesh, Bhutan, Brazil, Chile, China, Egypt, Arab Rep., Finland, France, Hungary, India, Iraq, Italy, Japan, Libya, Malaysia, Mexico, Nepal, Norway, Philippines, Portugal, Singapore, South Africa, Sri

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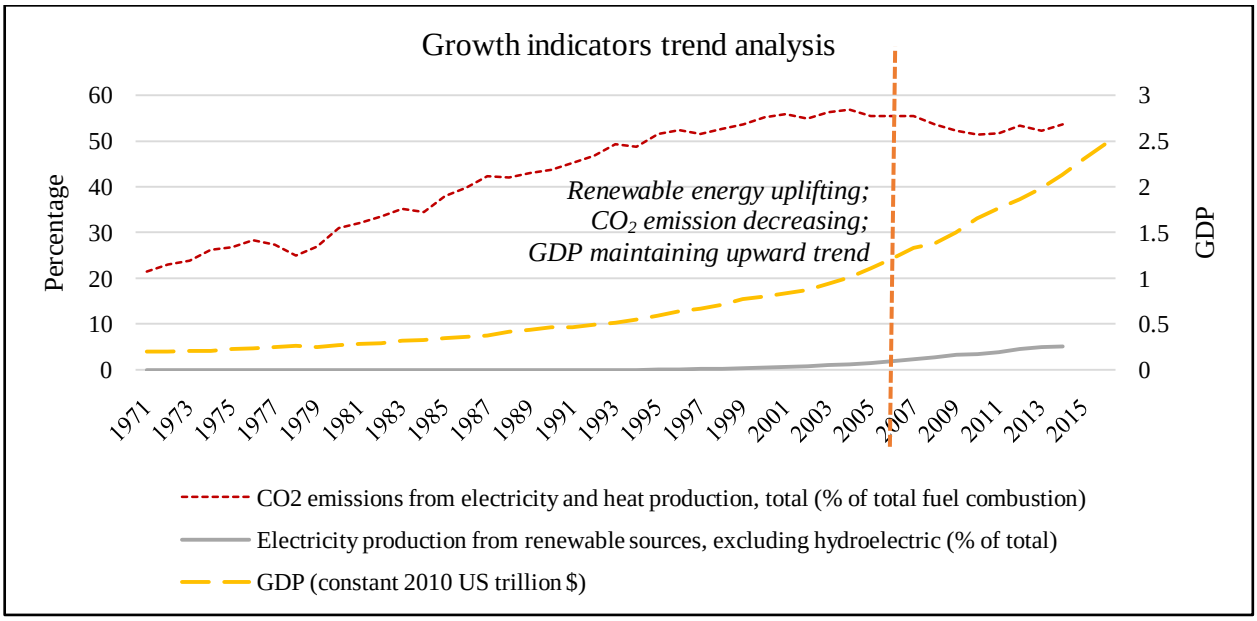
The data series is extracted from the databank of World Bank. The average of the last 7 years' time-series data has been considered for each country against each data series (indicator) to mitigate the effect of time series and make the data apt for cross-sectional analysis. A simple Pearson correlation technique of assessing the linear association between indicators is deployed.

Table 1: Correlation analysis of growth indicators for the world

Pearson Correlation coefficients	Access to electricity (% of population)	CO_2 emissions (metric tons per capita)	Electric power consumption (kWh per capita)	Electricity from renewable (% of total)	GDP (constant 2010 US$)
Access to electricity (% of population)	1				
CO_2 emissions (metric tons per capita)	0.51	1			
Electric power consumption (kWh per capita)	0.44	0.67	1		
Electricity from renewable (% of total)	0.30	-0.01	0.2	1	
GDP (constant 2010 US$)	0.21	0.45	0.23	0.02	1

Table 1 presents the correlation analysis of growth indicators of 33 major countries (including developing and developed countries).[6] The highlighted correlation values are significant at 5% level. The obvious positive association between electricity access and power consumption (0.44) can be observed along with a positive relationship between electricity from renewable energy and electricity access (0.30). This reveals an important fact that more contribution of renewable energy in electricity production of the nation promotes access to electricity by the nationals. Electricity access is one of the major health indicators of the development of society and the nation. Based on the available data, there is a bleak association between renewable energy electricity output and GDP growth, however, the relationship is positive (0.02). The study further diagnoses the growth indicators for India in particular.



(Source: Author)[7]

Figure 2: Growth indicator trend in India

Lanka, Sudan, Sweden, Switzerland, United Arab Emirates, United Kingdom, United States and Zimbabwe

[6] For this study, electricity access, power consumption, renewable energy contribution to electricity, CO_2 emissions and GDP have been considered as growth indicators.

[7] The plot and data are available in a separate excel file present in following 'Data and Analysis' section.

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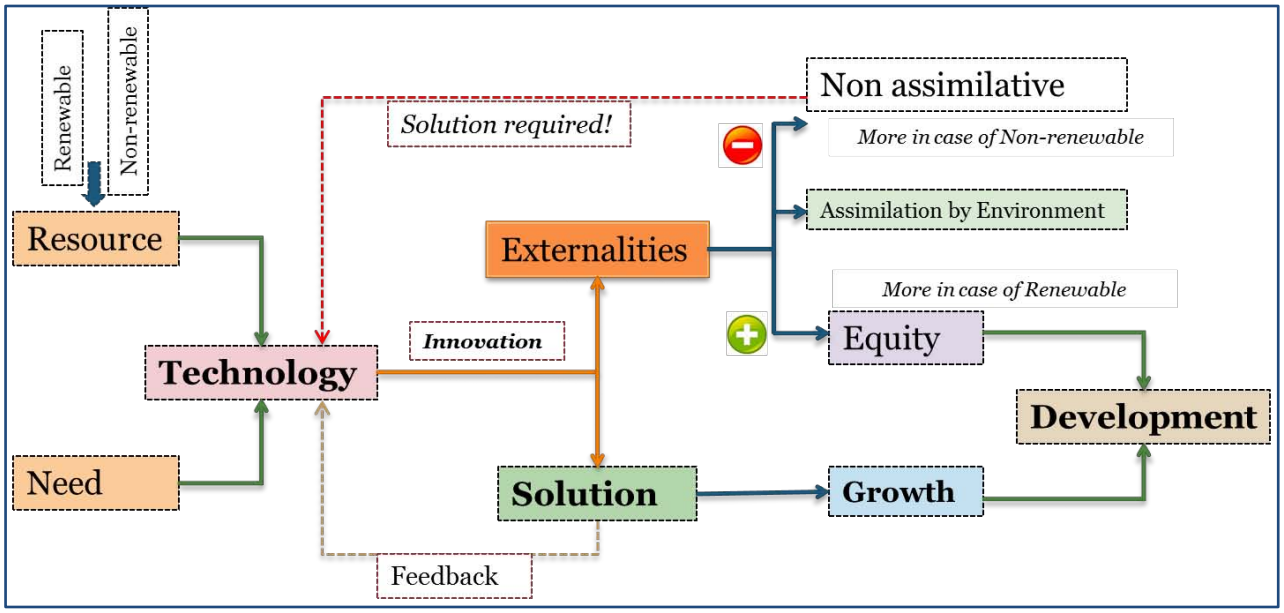
The time-series data of the major growth indicators concerned (with the relationship between renewable energy and economic growth), from 1971 through 2016, are plotted in the Figure 2. In the process of economic growth, CO_2 emission has also increased substantially until the year 2005 when a significant increase in the contribution of renewable energy to electricity production can be observed. Post 2005, the CO_2emission seems to start declining with the uplifting of renewable source electricity production, maintaining the pace of GDP growth in the Indian economy. This leads to the conclusion that renewable energy enables economic development, preserving the environment, and thus resulting in sustainable economic development.

IV. Sustainability Analysis

The implementation of renewable energy sources and technology to exploit sustainable resources for the development of the nation, falls in line with the definition of sustainability. In a granular framework, the energy can be assessed from major four dimensions of sustainability- (1) Availability, (2) Affordability, (3) Accessibility, and (4) Acceptability. For a century, fossil fuels have been satisfying the criteria of availability, affordability and accessibility, but at present, they measurably fail in the criterion of acceptability due to environmental and global warming concerns. The Paris Agreement signifies years of work in trying to combat climate change. In 1992, countries joined an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC). In 2005, the Kyoto Protocol became a legally binding treaty.

The county is the third-largest emitter of CO2 from fuel combustion with 2,222 MtCO2 in 2019. India's CO2 emissions grew at a Compound Annual Growth Rate (CAGR) of 5.8% from 1990 to 2019 (Enerdata, 2020). At the national level, the Government of India (GOI) has a voluntary pledge of reducing the emissions intensity of GDP by 20 to 25% over 2005 levels by 2020 and 33 to 35% by 2030. GOI has recently enhanced its target to have 175 GW of power from renewable sources by 2022 and 40% of cumulative installed electric power capacity by 2030. The country has targeted to create a carbon sink of 2.5-3 GtCO2e through additional forest and tree cover by 2030. Development with the concern of climate change is the key challenge for India which is leading in the league of developing economies. The study considers the interaction of need, resources (renewable and non-renewable), technology, and externalities (positive and negative) producing environmental destruction and economic development.



(Source: Author)

Figure 3: Sustainable development framework with renewable and non-renewable sources

Figure 3 depicts the sustainable development framework incorporating both renewable and non-renewable energy sources as inputs to the system. Need for growth, calls for resources that can be consumed using technology. The energy which is the capacity to do work is the basic need of the hour which defines the driving force for life. The quality of our life is dependent on the continuous and reliable supply of energy sources. There is a continual debate about which is the "best" energy source, with considerations of availability and cost of the resource, efficiency of production, public safety, health, and marketing. Access to modern forms of energy carriers (electricity and cooking fuels) contributes to the economic and societal development of the country. The energy consumption and conversion processes generate the solution

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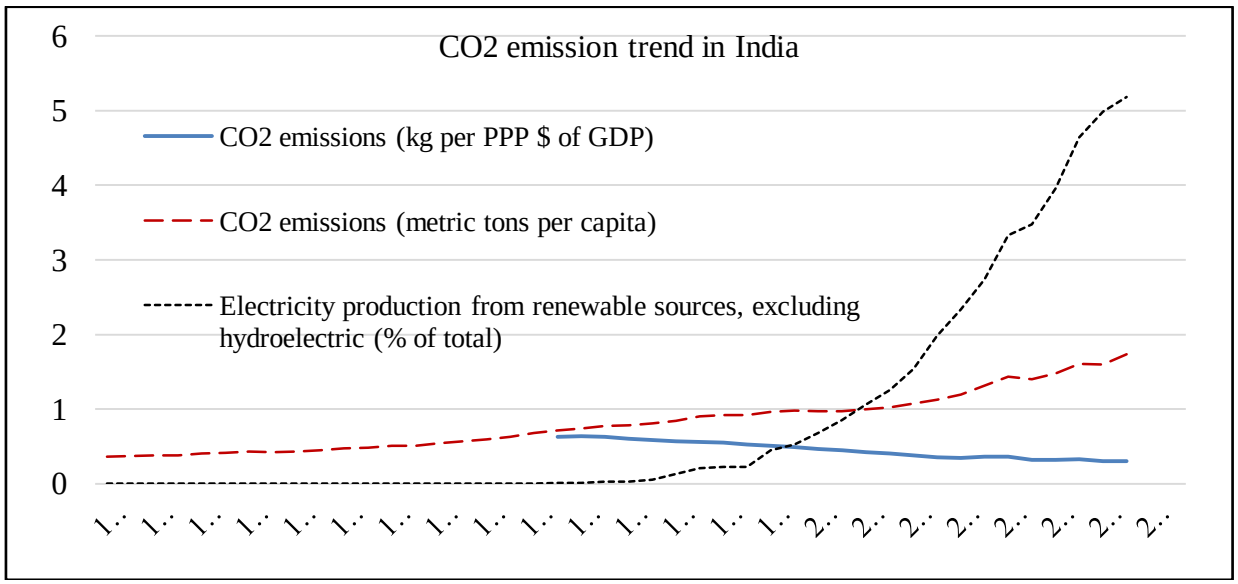
along with the positive (desirable) and the negative (undesirable) externalities as by-products. Some proportion of negative externalities can be assimilated by the environment or nature (assimilation of CO_2 emission by plants and forests; assimilation of wastages by ground as fertilizers etc.). However, the rest of the negative externalities turns non-assimilative and create environmental concerns for which one has to go back to technology to provide a solution that may again generate externalities and create other concerns. This cycle of growth and concerns continue in perpetuity. At the onset of the cycle, need and resources play the cornerstone role to control the entire cycle of development and generation of negative externalities. Reining the need up to a desired threshold and deployment of renewable energies as input resources mitigate the germination of undesirable externalities maintaining the desirable growth and development of the country.

Usage of solar energy needs manufacturing of solar panels, wind energy needs windmills, geothermal needs drilling technologies. With these facts, the generation of negative externalities cannot be ignored in the case of renewable energies as well. But, at the same time, positive externalities are spinning out of them in the form of employment generation (IRENA, 2016), reduced fossil fuel consumption, and increased acceptability in long run. These positive externalities outweigh all the negative externalities producing a long term and sustainable solution for economic development with moderate harm to the environment. India as a country that has a twin challenge of development and climate change, exhibits the benefit of the implementation of renewable energy for power generation and meeting the development need of the economy.



(Source: Author)[8]

Figure 4: CO_2 emission trend in India with incorporation of renewable energy

Figure 4depicts the trend of CO_2 emission per PPP (Purchasing Power Parity) $ of GDP and per capita along with the trend of renewable energy electricity production from 1971 through 2015 (Data from databank of World Bank). The graph witnesses the fact that India as a developing nation does emit CO_2 per capita with increasing trend resorting to increasing consumption of energy by individuals. However, when CO_2emission is observed from a GDP growth perspective, the trend seems downward sloping. This reveals India's strategic and sustainable development framework. CO_2 emission per capita may increase yearly but it decreases per PPP $ of GDP indicating that value-added in the economy (measured as GDP) has been increasing vis-à-vis CO_2 emission. Precisely phrasing, the rate of CO_2 emission per unit GDP has been decreasing. Eventually, this divergence of CO_2 emission per capita and GDP coincides with the uplifting trend of renewable energy electricity generation. This vindicates that a substantial contribution has been made by renewable energy in terms of mitigating the undesirable emission while maintaining the pace of economic growth.

To quantify the relationship, the study further estimates a linear regression model using the data series of the major 33 countries (considered in the earlier correlation analysis in section 3).CO_2 emissions (metric tons per capita), the dependent variable is regressed on Electric power consumption (kWh per capita), GDP (constant 2010 trillion US$) and Renewable electricity output (% of total electricity output).

[8] The plot and data are available in a separate excel file present in following 'Data and Analysis' section.

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Table 2: Regression result for CO_2 emission using other growth indicators

	Coefficients	Standard Error	t Stat	P-value
Intercept	4.226	0.836	5.052	0.000
Electric power consumption (kWh per capita)	0.001	0.000	6.362	0.000
GDP (constant 2010 trillion US$)	0.300	0.159	1.889	0.069
Renewable electricity output (% of total)	-0.056	0.015	-3.822	0.001

Table 2 presents the multiple linear regression modeling results to predict CO_2 emission. All three independent growth indicators are significant at 10% significance level and follow the expected relationship with the dependent variable. Electric power consumption per unit per capita increases the CO_2 emission by 1 gram (0.001 ton) per capita; 1 trillion-dollar increase in GDP also gives rise to CO_2 emission by 0.3 ton per capita; whereas 1% increase in renewable energy mitigates CO_2 emission by 56 grams per capita. This analysis also vouches for the increase in the contribution of renewable energy in power generation to reduce carbon footprint and develop the national economy.

V. Conclusion

The present study analyses the adoption and promotion of renewable energy in India from an economic and sustainability perspective using qualitative and quantitative frameworks and empirical data. Correlation analysis of growth indicators reveals that the increased contribution of renewable energy in power generation and electricity access tread in tandem. The time series trend of growth indicators supports the argument that renewable energy not only contributes to mitigating the carbon emission but also strengthens the economic growth by inviting the investments, enhancing the trade basket, and generating employment opportunities.

The great energy challenge of the future is to meet demand growth. Decisions made today on energy sector investments and infrastructure have long-lasting implications. Environmental consciousness and energy security concerns have compelled policymakers to explore energy supply options that are cost-effective, reliable, secure, and environmentally sustainable. Renewable energy is a key part of the solution. It can contribute to the long-term resilience of the Indian energy system, which underpins economic development.

Government commitments can take the form of credible, time-bound renewable energy targets, which serve to anchor investor confidence and set out the trajectory for the development of the sector. Importantly, targets must be backed by dedicated policies and regulatory frameworks.

Renewable energy is emerging not only as a solution to meet growing energy demand for economic growth while sharply reducing carbon emissions but also as a potential engine for economic growth and diversification. Renewable energy and technology are fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies Limitations and way forward.

The present study has holistically considered all the renewable energies and technologies in a single framework. However, there exist vast variations in the nature and technologies of access to various renewable energy sources. The economic and sustainability analysis is different for each renewable energy source. Consideration of such heterogeneity within the renewable energy will provide a clear pathway for analysis to the policymakers and government.

The study has been built on the foundation of renewable energy and economic growth from the perspective of the Indian economy. The roadmap may further be explored for the other developing and developed economies with cross-country comparisons. Each economy's occupational and economic structures are unique and the paths of development are different from others. Using the frame of reference of this study, the further avenues can be explored for sustainable development of all the economies and a holistic framework can be worked out for the world as a whole since environment and development are a concern for all and not limited to a country in particular.

References Références Referencias

1. Apergis, N., & Danuletiu, D. C. (2014). Renewable energy and economic growth: evidence from the sign of panel long-run causality. *International Journal of Energy Economics and Policy*, *4*(4), 578.
2. Bowden, N., & Payne, J. E. (2010). Sectoral analysis of the causal relationship between renewable and non-renewable energy consumption and real output in the US. *Energy Sources, Part B: Economics, Planning, and Policy*, *5*(4), 400-408.
3. Butlin, J. (1989). Our common future. By World commission on environment and development. (London, Oxford University Press, 1987, pp. 383£ 5.95.).

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4. CEA. 2020. All India Installed Capacity of Power Stations. New Delhi. http://cea.nic.in/reports/monthly/installedcapacity/2020/installed_capacity-06.pdf (September 17, 2020).
5. Day, R., Walker, G., & Simcock, N. (2016). Conceptualising energy use and energy poverty using a capabilities framework. *Energy Policy*, *93*, 255-264.
6. Enerdata. (2017). World Power consumption | Electricity consumption | Enerdata. https://yearbook.enerdata.net/electricity/electricity-domestic-consumption-data.html#energy-primary-production.html
7. Enerdata. (2020). CO2 Emissions from fuel Combustion. https://yearbook.enerdata.net/co2-fuel-combustion/CO2-emissions-data-from-fuel-combustion.html
8. Government of India. (2016). ECONOMIC SURVEY VOLUME-2. https://www.indiabudget.gov.in/es2016-17/echapter_vol2.pdf
9. Government of India. (2020, August 31). Power Sector at a Glance ALL INDIA. https://powermin.nic.in/en/content/power-sector-glance-all-india
10. International Renewable Energy Agency (2016). Renewable energy benefits: measuring the economics. Retrieved from http://www.irena.org/DocumentDownloads/Publications/IRENA_Measuring-the-Economics_2016.pdf
11. IEA. (2016). World Energy Outlook - 2016.
12. Kuznets, S. (1955). Economic growth and income inequality. The American economic review, 45(1), 1-28.
13. Leit, N. C. (2014). Economic growth, carbon dioxide emissions, renewable energy and globalization. International Journal of Energy Economics and Policy, 4(3), 391.
14. Ministry of Coal. (2020). Production And Supplies. Government of India. https://coal.nic.in/content/production-and-supplies
15. Ministry of new and renewable energy. (2019). Physical Progress (Achievements). Government of India. https://mnre.gov.in/physical-progress-achievements
16. Ministry of Statistics and Programme Implementation. (2020). Energy Statistics. http://www.mospi.gov.in/sites/default/files/publication_reports/ES_2020_240420m.pdf
17. Sari, R., Ewing, B. T., & Soytas, U. (2008). The relationship between disaggregate energy consumption and industrial production in the United States: an ARDL approach. Energy Economics, 30(5), 2302-2313.
18. Subrahmanya, M. B. (2014). Why does India's economic growth process falter?. Economic and Political Weekly, 49(8).
19. Tugcu, C. T. (2013). Disaggregate Energy Consumption and Total Factor Productivity: A Cointegration and Causality Analysis for the Turkish Economy. International Journal of Energy Economics and Policy, 3(3), 307.
20. Worldometer. (n.d.). India Population (2020) - Worldometer. Worldometer. Retrieved September 17, 2020, from https://www.worldometers.info/world-population/india-population/

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A Microscopic View of the Effect of Unemployment on Economic Growth in Nigeria

By Past. Prof. Abomaye-Nimenibo, Williams Aminadokiari Samuel

Obong University

Abstract- Employment generation in Nigeria is a welcome phenomenon as alleviating poverty and increasing economic activities to gain economic growth. It is the opposite of unemployment that has a devastating effect on the Nigerian economy. Nigeria's unemployment situation has increased with its attendant consequences of high social vices, enlarged poverty; under-utilisation of human capacity; social alienation, and weak Naira purchasing power. At different times, Nigeria's government put policies and programmes to solve unemployment, but no meaningful achievement is seen so far. It was deduced that most of Nigeria's established programs to fight against unemployment could not achieve their desired and expected results. Using secondary data, we recommend, among other things, that the agricultural sector be improved upon to create employment and reduce unemployment in Nigeria. The public and private sectors should join hands in their quests in reducing unemployment and embark on Entrepreneurial development; self-employment training and etcetera is encouraged.

Keywords: unemployment, employment generation, the economy, social vices, poverty, human capacity, entrepreneurial development, and self-employment.

GJHSS-E Classification: FOR Code: 140299



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I. Introduction

The Nigerian economy has undergone many structural changes since the attainment of independence in 1960, and is faced with many challenges despite the harvest of economic boom from oil. One of such challenges is a rising trend of unemployment. The domestic structural adjustments have not resulted in any significant and sustainable economic growth, and available data revealed that the Nigerian economy grew relatively in the 1970s due to the oil boom. The superfluous profits from the oil boom were not appropriately invested and went into wasteful expenditures in unviable projects such as the 1977 hosting of the Festival of Arts and Culture (FESTAC) with the slogan, “Money is not our problem but how to spend it.” The Yakubu Gowon administration distorted Nigeria's revenue base for policy planning when late Lt. Col. Odumegu Ojuku explained the cause factor of unemployment in his book "I am involved." He concluded that many graduates' production was not responsible for Nigeria's unemployment situation; instead, the social scourge of unemployment was caused by the inversely proportional pattern of education and economic advancement. He itemised other causes such as impropriety on the psychological "blindness of our economic planners in the oil boom days than on "over-production” of graduates.

However, Gbosi (1997) stated that unemployment is a situation in which people who are willing and able to work at the prevailing wage rate cannot find jobs. Therefore, anybody who is unwilling and actively seeking paid employment should not be counted as part of the unemployed workforce. On the other hand, additional workers should not count as part of the unemployed labour force. If we do so, we may be underestimating the official rate of unemployment. No matter how one defines unemployment, the underlying philosophy is that unemployment means a state of joblessness.

Unemployment is one of the major problems confronting the three tiers of government in Nigeria. The scenario cuts across virtually all strata of society. Unemployment is when some people who fall within the working population, capable and willing to work, cannot obtain befitting work to do at the prevailing wage rate. Put differently, it is a situation in which people who are willing and able to work for others at the predominant wage rate cannot find jobs. The primary causes of unemployment in Nigeria's economy in recent years include bad economic policies, bad educational planning, corruption, global financial crises, the poor performance of small-scale enterprises and imperfect flow of market information, rapid population growth, etcetera (Abomaye-Nimenibo & Inimino, 2016).

Unemployment has been one of the severe impairments to social progress, culminating in a massive waste of a country's workforce resources, generating welfare loss in terms of lower output, income generation, and well-being (Akinboyo 1987 and Raheem, 1993). Unemployment is a very serious issue in Africa, with Nigeria not being exempted.

Bello (2003) stated that from time immemorial, unemployment has always been an issue of great concern to economists, policymakers, and economic managers alike; and has a demoralising effect on the citizens, the state, and the nation.

The classical school of thought gave a central point of thinking on unemployment's undesirability. The Keynesian revolution of the 1930s, which appropriated the explosive attack on economic accepted belief

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seemingly, treated unemployment as a central issue of great concern.

The need to avoid the undesirable effects of unemployment has made the subject of unemployment feature a very pathetic problem in many developing countries. Parenthetically, the economies of these countries are also categorised as low productive. Thus, many policymakers saw the connectivity between productivity and unemployment, which calls for concern to discuss unemployment in their countries debate. Unemployment is a primary macroeconomic objective of the government. The government and the international agencies' primary policy aim is to reduce the unemployment rate in any country. The total labour force comprises all persons aged 15-64 years of all those not incapacitated to work and excludes students, home keepers, retired persons, and stay-at-home to work or not interested persons. Unemployment in Nigeria refers to the proportion of labour force available for work but did not work in the week preceding the survey period for at least 39 hours. The Bureau of Statistics in 2009 puts the figure of unemployed at 19.7 percent, i.e., about 30 million, excluding about 40 million other Nigerian youths captured in World Bank statistics in 2009. This unemployment figure revealed that about 70 million Nigerians are unemployed, meaning that 50 percent of the population of 140 million Nigerians are unemployed in 2009. Comparing Nigeria's situation of the unemployed with that of the Middle East within that same period, where unemployment and poverty played a significant role in their uprising, Nigeria's unemployment situation is a time bomb. The unemployment situation is threatening the existence, security, peaceful co-existence, and development of Nigeria.

Economists all over the world and at all times have indicated various degrees of concern over the threat of the gargantuan creature called unemployment. Unemployment has something to do with the population of a nation which is commonly divided into two separate distinctions called:

i. The economically active population and
ii. The economically inactive population.

The economically active population refers to the labour force or working population that is willing and able to work but not employed and are engaged in producing goods and services (i.e., the physically working).

The economically inactive population are those neither working nor looking for jobs.

The International Labour Organization (ILO) talks of the unemployed as the number of the economically active population without work but available for and seeking for job. They include people who have lost their jobs and those who have voluntarily left work (World Bank, 1998) which consist of homemakers, full-time students, invalids, those below the legal age for labour, old, and retired persons.

Englama (2001) states that unemployment causes misery, social unrest, and hopelessness for the unemployed. Most ethnic and religious crisis in some parts of Nigeria was due primarily to unemployment issues. Similarly, the problem of armed robbery and other social vices are traced mainly to unemployment (Abomaye-Nimenibo, 2015).

II. Literature on Unemployment

Generally, unemployment means a state of joblessness. According to Briggs (1973), unemployment is defined as the difference between the amount of labour employed at current wage levels and working conditions and the amount of labour not hired at these levels. However, Gbosi (1997) has defined unemployment as a situation in which people who are willing and able to work at the prevailing wage rate cannot find jobs. Anyone unwilling and not actively seeking paid employment should not be counted as part of the unemployed workforce; otherwise, we may be overestimating unemployment's official rate.

On the other hand, additional workers should not count as part of the unemployed labour force; if we do so, we may be underestimating the official rate of unemployment. No matter how one defines unemployment, the underlying philosophy is that unemployment means a state of joblessness.

a) The Nigerian Unemployment Status

Since the attainment of independence in 1960, Nigeria has undergone various fundamental structural changes, which have not resulted in significant economic growth and development irrespective of economic growth in the 1970s. The oil boom of the 1970s brought outrageous profits but relatively encouraged wasteful expenditures. However, primary school education accounted for 76.8/80.6 percent of the unemployment in 1974 and 1978, respectively. Recently, the situation was compounded by the increasing unemployment of professionals such as accountants and engineers.

Aigbokhan (2000) has stated that unemployment accounted for less than 1% of the unemployed in Nigeria. Between 1974 and 1984, the unemployment rate rose to 4% for urban areas and 2.2% for rural areas. In 2005, the Nigerian's unemployment rate declined to 11.9% from the 2003 figure of 14.8% due to the government's various efforts through poverty alleviation programmes. NBS (2010) has given us the different state unemployment rate as tabulated below:

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Table 2.1: Unemployment at State Levels

S/N.	Name of State	Unemployment Rate
1.	Akwa Ibom	34.1%,
2.	Adamawa	29.4%,
3.	Bayelsa	38.4%,
4.	Bauchi	37.2%,
5.	Borno	27.7%,
6.	FCT	21.5%
7.	Gombe	32.1%,
8.	Imo	20.8%
9.	Jigawa	26.5%,
10.	Kano	27 6%,
11.	Katsina	37.3%,
12.	Niger	0.2%
13.	Plateau	7.1%
14.	Taraba	26.8%,
15.	Yobe	27.3%,
16.	Zamfara	51.1%

In 2005, Niger State has the lowest unemployment rate of 0.2%

Zamfara has the highest unemployment rate of 51.1%

The general rate of unemployment in Nigeria as 2005 was 11.9%

Table 1.1: Unemployment Rate from 1980 to 2018

Year	Rate (%)
1980	5.3
1981	4.8
1982	5.4
1983	5.2
1984	6.2
1985	6.1
986	5.3
1987	7.0
1988	5.1
1989	4.5
1990	3.5
1991	3.1
1992	3.5
1993	3.4
1994	3.2
1995	1.9
1996	2.8
1997	3.4
1998	3.5
1999	17.5
2000	13.1
2001	13.6
2002	12.6
2003	14.8
2004	13.4
2005	11.9
2006	12.3
2007	12.7
2008	14.9
2009	19.7
2010	21.1
2011	23.9

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2012	22
2013	23.1
2014	24.5
2015	26.7
2016	13.4
2017	17.5
2018	22.6

b) Types of Unemployment

Economists have generally used several theories to explain the phenomenon of 'unemployment' in an economy. Unemployment in Nigeria is of different kinds, but we shall confine ourselves to the following: seasonal, factional, structural, and cyclical (insufficient aggregate demand) unemployment. The review will explain better the various types of unemployment and their implications for Nigeria's economic growth and development.

i. *Seasonal Unemployment*

This type of unemployment occurs due to seasonal fluctuations or variations in the activities of a named industry caused by climatic changes, changes in fashions, changes in occupations, and the inherent nature of such businesses.

Seasonal unemployment will always occur because the demand for some workers varies widely over the years. Structural unemployment occurs mainly because seasonal employees' skills are not required in the specific labour market for some part of the year. Seasonal unemployment is not as challenging as chronic structural unemployment because the demand for seasonal skills resurfaces reasonably.

For example, the raincoat factories are closed down in the dry season, throwing the workers out of their jobs because there is no demand for raincoat during the dry season. Likewise, the sugar industry is seasonal because sugar-cane crushing is not done at all seasons but a particular season.

Elrenberg and Smith (1982) observed that agricultural workers' demand declines after the planting season and remains low until the harvesting season.

Similarly, the request for construction workers usually falls during the rainy season and picks up during the dry season.

ii. *Frictional Unemployment*

By frictional unemployment, we mean that unemployment occurs when workers spend time searching for new jobs. It is unemployment that arises because it takes workers some time to move from one occupation to another. A worker must look around for an excellent fitting job, and this process takes some time. During this time, the individual is considered unemployed. However, frictional unemployment last only short periods and not be specifically problematic from an economic standpoint. Technology helps both workers and companies make the job search process more efficient.

For example, a worker in Port Harcourt may leave his present job to Lagos with the expectation of getting a higher paid job, which may not be available immediately. Hence, people got interregnum time in waiting for a job. During this period the job seeker is classified by labour economists as a frictionally unemployed person. It is important to note that several factors are responsible for frictional unemployment. One such factor is the imperfect flow of information in the labour market as they are dynamic, as the neo-classical economists contended. Second, it usually takes a long time for unemployed workers to get in touch with potential employers who have available job openings. There are always new entrants in the labour market at every point in time. Some of these workers may be searching for employment, while other employed or underemployed individuals will be leaving the labour force. Frictional unemployment is determined by how individuals flow in and out of the labour market in search of and secure jobs (Gbosi, 1997).

Akpakpan (1999) believed that Frictional Unemployment is unemployment that is an outcome of the standard workings of the labour market, where people change jobs at any time. People who are in the course of changing jobs suffer unemployment, called frictional unemployment, which is temporary.

iii. *Structural Unemployment*

Structural unemployment is the unemployment that exists when an economy is in full employment, and there are some structural changes in the structure of an industry or economy. Such changes take the form of decreased demand for specific skills or a change in technology in a particular trade. Some structurally unemployed workers do not have jobs because the industry they would have liked to work in may decrease output. These declining industries, therefore, have a falling demand for labour. It may also occur due to movement in the natural employment rate itself, as changes in labour market institutions, demographic shifts, etcetera, brought about by economic variables, such as aggregate demand and actual and expected real wage rate.

Structural unemployment occurs because some labour markets have more workers than available jobs. For some reason, wages do not decrease to bring the market into equilibrium. Structural unemployment may

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result when workers possess skills that are not in high demand in the market place and lack skills that are in high demand123. In other words, it results when there is a mismatch between workers' skills and employer's needs.

Solomon (1980) stated that structural unemployment might occur when individuals look for jobs in a particular location with no industry to utilise their skills. Alternatively, these individuals possess the wrong skills that employers are looking for and so could not be employed.

iv. *Cyclical unemployment*

Cyclical unemployment occurs due to fluctuations around the natural employment rate due to aggregate demand changes. This situation occurs when there is an inadequate level of aggregate demand. In every market economy, producers produce goods in anticipation of request, but when aggregate demand in any economy is deficient, unemployment will arise. Because factory workers will be laid off, which may lead to depression, and according to Keynes, the great depression of the 1930s was as a result of deficient aggregate demand. This type of unemployment is also known as Keynesian unemployment due to the business cycle's operation. It arises at a time when the sufficient aggregate demand of the community becomes deficient concerning the productive capacity of the country.

It is probably not surprising that unemployment is higher during recessions and depressions and lower during high economic growth. Thus, the Economist has coined the term cyclical unemployment to describe the unemployment associated with the business cycles occurring in the economy. It occurs during recessions because when demand for goods and services in an economy falls, some companies respond by cutting production and laying off workers rather than reducing wages and prices. As an economy recovers from recession or depression, cyclical unemployment tends to disappear naturally.

v. *Real Wage (Classical) Unemployment*

This is a form of dis-equilibrium unemployment that occurs when real wages for jobs exceed the market cleaning level. Traditionally, trade unions and wages councils are the institutions causing this type of unemployment. However, the importance of trade unions in the UK labour market has diminished significantly over recent years. Unemployment has not stopped reaching nearly three million, twice in the last twenty years. Classical unemployment is as a result of real wages being above their market-clearing level leading to an excess supply of labour. Some economists believe that the national minimum wage (NMW) introduction may create some classical unemployment in industries where average wage rates are closer to the NMW level. International competition from low labour cost producers is severe.

vi. *Hidden Unemployment*

Whatever the published figure for unemployment, there are bound to be people who are interested in taking paid work but who, for one reason or another, are not classified as unemployed. The unemployed are discouraged workers or people who have effectively given up the active search for jobs, perhaps because they have been out of work for a long time and have lost both the motivation to apply for trades and may not also have the requisite skills. Financial incentives created by the income tax and state benefits incentives may make jobless labour lazy and no longer interested in applying for jobs.

vii. *Voluntary Unemployment*

Voluntary unemployment occurs when some people refuse to take up any paid employment or decide not to do any work. For example, some husbands may order their wives not to do any work but to stay at home as full-time housewives. Alternatively, some wives (the well-to-do) may command their husbands not to do any work but to stay at home as full-time househusbands for whatever reasons.

viii. *Under-Employment*

This is when a worker's potentialities are not fully exploited. There are financial, mental, and physical under-employment. It is financial when the worker is not getting equal pay from the work he is doing; mental when there is a mismatch between the job a person is doing and what he studied; and physical when the worker is underutilised.

ix. *Technological Unemployment*

This is unemployment resulting from switching from labour-intensive production to capital-intensive production. Those who are skilled are retained while the unskilled labourers are replaced with machines.

x. *Residual Unemployment*

This is the type of unemployment that faces people who are so low in a standard of efficiency that few occupations may be open to, meaning that a segment of the labour force cannot contribute substantially to the physical economy disability. Such labour includes physically disabled persons or handicaps.

xi. *Search Unemployment*

This arises when some people turn down offers to work, searching for highly paid jobs. It is not sure how long the search will last, depending on its prevailing economic situation.

xii. *Deficient Demand Unemployment*

This occurs where there is not enough aggregate demand to produce work for the whole labour force, no matter how they are trained.

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xiii. *Natural Unemployment*

There will always be some natural unemployment level, even in a healthy economy. The lowest unemployment rate is 2.5%, but some natural unemployment level, usually around 4%, is a healthy indicator.

xiv. *Under Employment*

This type of employment occurs when a worker's potential is not fully explored or when a worker earns less than the effort he puts into the job. An example, is that of a graduate doing the work of a cleaner).

xv. *Disguised Unemployment*

It refers to both mass unemployment and underemployment, being a situation that prevails in the agricultural sector of an underdeveloped and overpopulated country. For example, suppose four persons are trying to cultivate an acre of land supposedly meant for only three persons to nurture. In that case, only three of them are employed, and the remaining fourth person represent disguised unemployment.

c) Effects of Unemployment

i. *Brain drain*

Refers to unemployment prevailing among university graduates, resulting in youths' emigration and active adult population to other countries such as advanced nations of Europe and America. This brain drain leads to the loss of a highly educated and skilled workforce in Nigeria.

ii. *Increase in Social Vices and Crimes*

Frustrated unemployed youths could be a recruiting source of armed robbers, prostitutes, economic saboteurs, human traffickers, smugglers, militants, militias, etcetera to the detriment of the nation.

iii. Increase in Rural-Urban Migration

Unemployment aggravates rural-urban movement among youths who move to cities searching for non-existent jobs that also puts more pressure on existing food and social amenities in the cities.

iv. *Fall in National Output*

The existence of unemployment means that a nation cannot maximise the use of its labour force for increased output.

v. *Increased Drain on Government Finances*

The presence of unemployment necessitates an increase in government expenditure in the payment of unemployment benefits in civilised nations. The government also spends more on the provision of social services while it collects less revenue from taxes.

vi. *Potential Sources of Political Instability*

The army of unemployed youths serves as recruiting ground for disenchanted, disgruntled, and revolutionary elements in the society that are ready to cause political instability. Such social and political instability is inimical to economic development.

vii. *High Dependency Ratio*

The mass of unemployed persons will depend financially on the small number of the working population for their survival, reducing efficiency and savings.

vii. *Low Investment and Low National Income*

As a result of low savings, the investment will fall. As a result of the multiplier effect, income will also be low, thus creating a vicious cycle of poverty as investment is low, leading to low national income.

viii. *Fall in the Standard of Living*

Unemployment, through the resulting poverty and income inequality, reduces the standard of living of the masses. Unemployment widens variation gap, impoverishes the masses, and lowers their standard of living.

ix. *Stabilisation Policy*

There are some economic objectives (usually referred to as macro-economic objectives) which policy variables are to achieve monetary stability. The economic objectives are commonly referred to as target variables, while the policy variables for attaining them are instrumental variables. The instrumental variables are those that the authority in charge of balance can manipulate to achieve some specified economic objectives. Thus, stabilisation policy refers to those measures or actions by the government and apex monetary authority designed to increase income and employment, promote price stability, and maintain external balance (Onuchuku, 2000).

d) Causes of Unemployment

Several factors are responsible for unemployment in Nigeria and are discussed below as follows:

i. *Low Economic Growth Rate:* The country's overall economic situation in the eighties and nineties has been hostile and crawling. The high level of corruption and mismanagement of public funds have caused harsh economic policies. The Nigerian environment's insecurity, coupled with long-term despotic rule of the military, among other factors, has dampened the spirit of economic growth for a long time. In the nineties, the situation was so terrible that analysts described the period as a lost decade to Nigeria's economic growth.

ii. *Untimely Economic Policy Measures:* A crucial factor that has elicited the unemployment problem overtime is the small scale and cottage industries' demise. The Structural Adjustment Program (SAP) introduced in September 1986 ushered in liberalisation, deregulation, and the domestic currency devaluation program. Many of the domestic firms collapsed, resulting in loss of jobs,

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rendering many people jobless. Irrespective of the policies designed to jump-start the economy's growth, wrong timing makes some policy packages unfriendly to the economy given the Nigerian economy structure.

iii. *Impression About Technical and Vocational Studies:* First impression matters in everything, considering the wrong impression of students about technical and vocational education accounts for unemployment in technical education. Damachi (2001) pointed out that there is a societal bias against technical and vocational education, whereby many job seekers do not have practical skills to afford them self-employment. The unemployed graduates, therefore, depend on the government and the private sector for employment offers.

iv. *The Neglect of the Agricultural Sector:* The agricultural sector, the leading provider of employment in Nigeria, in the sixties and the seventies, employed over 60% of Nigerians. However, in the wake of oil discovery in Nigeria, the attention on this anchor sector of the economy shifted to the oil sector, where employment capacity is deficient. The oil industry has tried but not sufficient enough to absorb the teeming population of the Nigerian unemployed. Unemployment has continued to exist in a greater dimension.

v. *Sour high, despite all the various channels created in a Low Enabling Environment:* The low economic enabling environment that characterises the economy has continued to pose severe employment challenges in Nigeria. The security challenges have continued to hamper the various internal and external investment drives, thereby further exasperating unemployment in Nigeria. So, many job seekers who were not engaged in self-employment programs cannot do so because of the hostile production environment. Others attempt to wind up due to the absence of infrastructures and the overall heat of the investment environment.

vi. *Bad Educational Planning:* It is a widely held view that Nigerian graduates' high unemployment rate is ascribed to our educational system. The proliferation of higher education institutions and those seeking higher education for white-collar jobs is the leading cause of the problem. The creation of higher qualification that is closely related to the delinquent mismatch between educational planning and economic planning. Specifically, the rate of graduates turns out rises faster than the expansion of job opportunities.

vii. *Bad Economic Policies:* Over the years, the Nigerian government had adopted and implemented several economic policies. Some of these policies did not create new jobs. For example, the SAP adopted in 1986 and is technically implemented which has worsened Nigeria's unemployment problems. Most economic reforms have led to rising interest and exchange rates, causing many private enterprises to cut down on their workforce. These policies have also increased the frequency of retrenchment in the Nigerian economy's public and private sectors.

viii. *Pitiable Performance of Small and Medium Scale Industries:* Small and medium scale enterprises predominantly dominate the Nigerian industrial sector. In recent years, most of these enterprises have been operating at a marginal level. Any increase in costs of production usually forces many of these enterprises out of business. A case in point is what happened to Nigeria's Flour Mill Industry when embargo on importation of wheat the primary raw material was placed. The industry had to depend mainly on local raw materials, which, of course, were scarce and relatively expensive. Those enterprises that could not relate the increase in costs to the productive capacity had no other option than to reduce their workforce or fold up. This development eventually led to a fall in employment, and the nation's unemployment worsened again. We still have the same experience today.

ix. *Rapid Population Growth:* In recent years, Nigeria's population is on the increase. Nevertheless, the growth of the economy cannot catch up with rapid population growth. Consequently, the swelling of the inhabitants, spherically in the cities, led to high unemployment levels in Nigeria.

x. *Imperfect Flow of Labour Market Information:* A market is a place where the exchange takes place. It is where demand and supply work themselves out. In every marketplace, there are buyers and sellers. The labour market is no exception because there are inadequacies that create the usual rate of unemployment. The natural rate of unemployment arises due to imperfections in the labour market. Information in the Labour market is probably non-existent in Nigeria. If it does, it is usually unreliable and misleading. Lack of labour market information hinders the mobility of labour across geographical regions. For example, rural-dwellers may not have information on job openings in urban areas. As a result, they remain unemployed (Gbosi, 2015).

e) Consequences Of Unemployment In Nigeria

Bello (2003) has itemised the consequences of unemployment in Nigeria, which are very severe and threatening to the citizenry and the economy. While some of these consequences directly affected the unemployed, others, like epidemics, are limitless in effects.

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They include:

i. *Contributions to low GDP:* It is an established economic reality that the workforce's size directly impacts a country's GDP. The workers produce manufactured goods and services or agricultural produce unswervingly and brings in its wake, increasing purchasing power. Unemployment brings a reduction in the potential of a country's GDP.

ii. *Crimes and Violence: Unemployment contributes to crime and violence* in our society. Youth unemployment specifically, cuts across the rich and the poor, resulting in social tensions that could affect the entire fabric of a community, state, and the whole country, as is the case with the Niger-Delta Region of Nigeria.

iii. *Contributes to drug addiction:* Due to frustration resulting from not gainfully employed, most people, especially our youths, resorts to drugs which they erroneously believed to ease unemployment trauma/frustration.

iv. *Unemployment contributes to the weak labour force:* The most direct impact on a frail labour force and the economy is a loss of the output of goods and services. Bellemare and Poulin-Simon (1994) had observed that a weak labour force having no income tax to collect brings loss of receipts from indirect taxes such as Pay-as-you-earn (PAYE), and value-added tax, making the government take less tax revenue.

v. *Psychological trauma:* The Nigerian Youths and graduates who have spent years in Schools acquiring skills to complete study develop psychological trauma when unemployed, thereby dashing and shattering their dreams and aspirations. They have visions of securing satisfying jobs following their years of struggle to meet up with their basic needs, wants, and necessities of life such as food, shelter, clothing, and healthcare. Their expectation of being a graduate has brought nothing to their expectant life of comfort and dignity, which elude them as they were not gainfully employed. The trauma of seeing their dreams shattered month after month leads to deep psychological scars in their young minds, culminating in clinical depression.

vi. *Lack of Family Support:* Unemployment of youths has resulted in adolescences not fending and caring for their aged parents who are retired in their primes with little or non-pension that could not sustain them. In such a situation, the calamity, sorrow, and woes experienced are unimaginable and incredible, sending many of them to their early graves.

vii. *Breakdown of Law and order:* It was established that educated unemployed are likely to take to crimes such as blue-collar or white-collar crimes more quickly than others. At some stage of their careers, the theory that they would have seen good life failed in seeing these dreams turn to reality, causing a lot of them to turn to sophisticated crimes.

viii. Health hazards: It is equally comfortable to visualise that lack of steady income could, apart from the above ills, lead to inadequate nutrition and adversely affect the health of the youth and their families.

ix. *Political instability:* When unemployment rises in a community, dissatisfaction with the incumbent government leads to frequent government changes that are not healthy enough for a nation, and that could cause political upheavals and frequent political changes in leadership. President Franklin D. Roosevelt of USA observation has it that "Not only our future economic soundness but the very soundness of our democratic institutions depends on the determination of our government to give employment to idle men." That unemployment and underemployment are the saddest sights in human life.

f) Theoretical Review

We use the Keynesian theory of unemployment; this is because it is more relevant to the Nigerian situation. And it varies with the model specified in Section three, i.e., GDP depends on unemployment, government expenditure and money supply (MS). Keynesian Economists see unemployment as a situation in which the number of people able. They are willing to work at the prevailing wage rate exceeds the number of jobs available, and at the same time, firms are unable to sell all the goods they would like to sell (bannock et al., 1998). When carefully analysed, the Keynesian unemployment applies to situations in Nigeria (Bello 2003). Here, unemployment can result a state where many Nigerian consumers including the government, prefer foreign goods to domestic goods, thereby causing the domestic producers to face with the problems of low demand that naturally forces them to lower output and, of course, reduces workforce. This experience continues in some firms, especially the small-scale ones, till they are push them out of the market resulting in the loss of more jobs, the long- term unemployment remains in the market for too long and thereby reducing the costs of job finding. Keynes economists believed that government interference is beneficial to any economy, and that through fiscal and monetary policies, the government uses goods or services produced to reduce the business cycle. Government spending reduces the price for goods and services, making them more affordable, which increases demand and consumer costs. Over the years,

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corruption, civil war, military rule, and mismanagement have delayed the economic growth of the country. Nigeria is rich in both human and material resources. However, years of negligence and deprived government policies have led to the underutilization of these resources. According to Toluene (2006), classical economists argued that unemployment exists when unions maintain wages above their equilibrium level. When this happens, we have a situation of involuntary unemployment. Cyclical unemployment differs from structural and frictional unemployment (Lindbeeket et al., 1999). It is unemployment that results from a lack of aggregate demand in a downswing in the business cycle (Bannock et al., 1998).

Professor A.C. Pigou, in his theory of unemployment (1934), makes the volume of employment depend on the real rates of wages and the actual demand function for labour. These two fundamental factors interplay in the market to determine equilibrium employment, assuming there is no involuntary unemployment. As noted by Keynes (1936), changes in the investment rate can shift the volume of engagement, thus a change in unemployment. Involuntary unemployment is possible, as evidenced during the great depression. Against the popular view of the orthodoxy (classical economics), Keynes showed that it is possible for any economy to go into depression when factors of production were unutilised to achieve optimum economic configurations.

i. *Classical Theory*

The views of most economists always go with their thinking at that particular time. The two most important schools of economic thought were the "classical and Keynesian" The two have different ideas on the effect of unemployment. The classical was the school of thought that emphasized the role of money in explaining short term changes in national income. Historically, this theory view unemployment in terms of aggregation. So, involuntary unemployment was a short-term phenomenon resulting from discrepancies between the price level and the wage level. Unemployment was because of high wage paid to workers which to the classicalist should be reduced, which will eliminate unemployment except for frictional unemployment. They believed strongly in the theory of demand and supply. So, urban unemployment is an offshoot of a low labour supply above the capacity of the economy. Consequently, the school argued that the demand for too high a worker wages with no corresponding increase in productivity, and with higher product cost, thereby discouraging competitiveness among local and foreign industries. Hence, the reduction in sales, causing mass retrenchment of workers resulting in unemployment.

ii. *Keynesian Theory*

John Maynard Keynes' ideas revolutionized thinking in several areas of macroeconomics including unemployment, money supply, and inflation, which are published in his book on the general theory of unemployment, interest and money.

Keynesian unemployment, also known as cyclical or demand deficient unemployment, occurs because of deficiency in aggregate demand in the economy. Cyclical unemployment rises when the economy is at downturn and cascades when it improves. Demand for most goods and services cataracts, less production is needed; wages do not decrease to meet the equilibrium level, and mass unemployment results.

Thirlwal (1979), Grill and Zanalda (1995), and Hussian and Nadol (1997), examined the Keynesian theory, and posit that increase in employment, capital stock, and technological change are endogenous and fundamental determinants of long-term growth of output hire of workers. Keynesian theory of employment is depended on real demand, resulting in increased output, which creates income to aid further production, that calls for more labour. The aggregate supply is a function of physical, and technical conditions that do not change in the short run, which remains stable. Keynes concentrated on aggregate demand function to fight depression and unemployment. Thus, consumption and investment demands are increased by raising the propensity to consume goods and services to create proceeds and engage workers. However, the psychology of the people 's taste, habit, etc. (propensity to consume) remains constant in the short run.

iii. *Marxian Theory*

It is in the very nature of the capitalist mode of production to overwork some workers while keeping the rest as a reserve army of unemployed393 people. Marxists also share the Keynesian view of the relationship between economic demand and employment, but with the caveat that the market system's propensity to slash wages and reduce labour causing crises of unemployment and periods of low economic activity. To Karl Marx, unemployment is rooted in an unstable capitalist system, that provides a "reserve army of labour" that exerts descendant burden on wages. These reserve armies of labour fight among themselves for scarce jobs at lower and lower wages. The Marxian's advocated the abolition of capitalism and shift to a socialist or communist economic system, that has nothing doing with unemployment, which is a proof of the inability of a capitalist system.

iv. *Efficiency Wage Theory*

Efficiency wage theory is a macro-economic approach to explaining unemployment. The rationale behind the theory is as follows; assume that workers

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others and are therefore less likely to work harder. The effort is a function of costly monitoring, i.e., if you are closely monitored. An employer cares about the cost of labour (the wage rate). However, the salary is dependent upon the productivity of the workers. So, the objective is to minimize the wage by dividing the productivity per unit produced. There are at least two methods to solve: Firstly, you can increase productivity by increasing wages. The reason for this is that as wages increases, the cost shrinking becomes higher because if you are caught stealing, you are fired and lose your wages. The higher the salary, the more you lose by being fired. Therefore, a higher pay means that you work even harder since it is more imperative for you to earn more money than fired.

III. Method of Study

According to Osuala (2005), research is simply the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis, and interpretation of data. Research advances knowledge, promotes progress, and enables man to relate more effectively to his environment, accomplish his purposes, and resolve his conflicts.

Asika (2004) defined research as any organised inquiry that aims at providing information for solving identified problems. These problems must of necessity use scientific inquiry method, inherent in research as consisting of five steps: identification of problems, its definition, and analysis, a deduction based on the investigation including recommendations of solutions to the delinquent, and implementation of the proffered solutions.

To Fox (1969) and Nwankwo (1984), research is a process of gathering information and drawing conclusions. Fred Kerlinger (1973) and Nwanna (1981) defined research as finding a solution to a problem.

Mouly (1970) opined that research is a systematic, objective, and accumulated search for the solution of a well-defined problem. Best and Kahn (1989), their contribution, defined research as the systematic and objective analysis and recording of controlled observations that may lead to the development of generalisation, principles, or theories resulting in prediction and possibly ultimate control of events.

Bassey (2002) opined that research as a rotational process that tries hard to overthrow its speculation rather than define them, meaning that enquiry refers to any organised inquiry that aims to provide information to solve identified problems.

According to Hornby (2006), research is defined as a careful study, especially in other to discover new facts or information about it: medical/historical/ scientific, etcetera. Research and development (R&D) apply to industries, and it refers to work that tries to find new products and processes or improve existing ones.

Akpakpan (2003) defined research as "a careful search, a study, inquiry; usually critically and exhaustive investigation or experimentation, living for it, aim the revision or conformation of an accepted conclusion or for generalising in the light of newly discovered facts. Thus, the facts revealed could help confirm an existing knowledge or acquire new knowledge or contribute to data to solve a problem.

According to Abomaye-Nimenibo (2015), research is the systematic and scientific method of inquiry leading to the obtainment of a looked-for solution to a problem using a systematic study method. An agreed mode of carrying out an investigation should lead to the result's achievable, either positive or negative, of the solution looking for, based on the adduced facts, which must be devoid of manipulation against the physical sciences' manipulations. The social behaviour of the people could not be assessed under a controlled experiment. There is no one all-inclusive or comprehensive definition of the concept of research.

However, any reasonable definition of the concept must contain most, if not all, of the following elements:

i. *Objectivity:* There are specific standard procedures that must be followed in investigating any problem without being biased or sentimental so that the results reached are reliable.
ii. *Systematicity:* The research must be such that it can be replicated or repeated by other researchers to find out whether the results obtained are accurate or not.
iii. *Control:* This means controlling variables outside the ones investigated to avoid interference and manipulating results.
iv. *Criticality:* The researcher must be well-armed with knowledge in his approach to the study, and concrete criticism must come out at every step in the research study to maintain objectivity.

Considering the research elements, it is true that no single or all-embracing definition can encompass all these elements. Research is an objective, systematic, controlled, and critical activity planned and directed towards discovering and developing dependable knowledge. Thus, for any study to be accurate, it must be objective, systematic to be replicable, and critical to allow enough room for judgment. So, having these elements as a guide in research, research, therefore, becomes a tool for advancing knowledge, promoting progress, and enabling man to relate more effectively with his environment to accomplish his purpose and resolve his conflict (Osuala, 2005). Hence, our reliance on library research.

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Research does not stand for routine activities of applying what is already known or teaching the usual sense of the word as known. It is earmarked for activities designed to discover facts and relationships that will make knowledge more effective (Osuala, 2005).

a) Types of Research

There has been a confusing array of research types arising from the fact that researchers have not agreed on any research classification system. Therefore, we need to look at the various types and methods of research to appraise, streamlining, and harnessing them into one cohesive slot. Fred Kerlinger (1973) pointed out the followings as an array of the methods of study generally found in research textbooks:

1. Experimental, historical and inferential research.
2. Exploratory, descriptive, and inferential causality.
3. Experimental, Ex post factor research.
4. Historical, descriptive, case, and clinical studies.
5. Sample survey, field studies, and experimental laboratory research.
6. Exploratory, descriptive, and causal research.
7. Exploratory and conclusive research.

Having these exposed classifications, the student wants to know the type of research to accept or adopt as appropriate. These various methods revealed similarities among them with a more concise and precise methodology or method of study. The choice depends on the type of research one wishes to conduct.

i. *Adoption of Ex-Post factor Research:*

We adopted Ex-Post factor research. Ex post facto, meaning "After-the-fact" research, is research carried out after the events studied have taken place and the data so postulated are already in existence. It is a systematic empirical study where the researcher does not control or manipulate the independent variables in any form. The situation for the learning already exists and has already taken place. However, the researcher can indeed create or use his research to generate the requisite data for analysis, especially when it comes to experimentation.

Ex-post factor research is like survey research as it is more inclined to data gathering than manipulating a variable. It is also called Library literature, where the required data is already available in the concerned institution (Abomaye-Nimenibo, 2016a).

ii. *Differences Between Ex-Post Facto, Experimentation And Survey Research*

The followings are differences between *ex-post facto* research and experimentation and survey research.

1. Ex post factor library research cannot use control measures in its investigation as there can be no manipulation of data because the events have already taken place. Therefore, the research is conducted after-the-fact. So, there can neither be a manipulation nor assignment of groups to achieve a degree of control and gather accurate data.
2. If we are to use a data control mechanism or manipulation to evoke a response and record data from the manipulation then, we need to have all the data on independent variables and not that we may not have data on the dependent variables. However, the primary requirement is the independent variable.
3. In ex-post factor research, both the independent and dependent variables are observed simultaneously since the latter's effects, and the latter had occurred before the study.
4. A very major difference between *ex post facto* research and survey and experimentation research is found like hypothesis testing (what should be and what is).

Despite its lack of precision, ex-post factor research still finds a place in scientific business research since it is a realistic approach to behavioural or social science research. Experimentation often does not occur in real-life situations and may need one type of contrivance (device) of research situation or another.

IV. Effort Made at Combating Unemployment in Nigeria

a) Various programmes set up to curb unemployment in Nigeria are:

A. *National Directorate of Employment (NDE)* is one of the Nigerian government's steps to reducing unemployment in Nigeria, and was established on 22nd November 1986. Its objective includes:

i. Promptly and effectively fighting unemployment by designing and implementing innovative programmes directed towards training opportunities.
ii. The guidance and management support services in giving funds to graduate farmers and small-scale entrepreneurs.
iii. Youth employment and vocational skills development programme.
iv. Special public works.
v. Carries out small scale industries and graduate employment programme.
vi. Set up Agricultural development programme, whose aims is to:
   a. generate employment for graduates, non-graduates, and School leavers in the Agricultural sector,
   b. encourage self-employment in agricultural production and marketing.

A team of Agricultural professionals in the Agricultural department of the directorate monitors these programmes. However, factors that include inadequate funding and the late release of funds from the federation account have impaired the effectiveness of the NDE

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agricultural programmes, as reported by Chinedum (2006) and Akintoye (2008).

B. *Establishment of National Economic Employment and Development Strategy (NEEDS).*

The NEEDS was introduced in March 2004, to correct the various macroeconomic imbalances inherent in the economy, solve social challenges, tackle the structural disparity inherent in an economy. Our principal economic goal is to build a modem Nigeria that maximises every citizen's potential to become the most extensive and most robust economy in Africa and generate employment with poverty reduction. Adebayo and Ogunrinola (2006) stated that, for NEEDS to achieve its objectives, she has to design many integrated programmes for generating employment opportunities for both women and youths to ensure economic growth and development. Despite all the action plans postulated for the period 2003-2007, the impact of NEEDS in combating the unemployment problem is not felt yet. This further points to the need to seek help in the informal sector to reduce unemployment drastically.

b) Unemployment and Economic Growth

This study is poised to answer whether there is any relationship between unemployment and economic growth and if in the affirmative, then was the relationship positive or negative? Walterskirchen (1999) has argued that there should be no argument about the relationship being positive or negative, even though GDP and unemployment may be rising in the long run. Employment will only increase if the GDP is increasing faster than productivity. Other things being equal, the greater the number of goods and services produced, the greater the labour required for production; because economic growth and employment go pari pasu (hand in hand). However, there is also the notion that higher productivity could mean fewer jobs. Calmfors and Holmlund (2000) had equally argued that there is often a failure to distinguish between increases in output due to higher capacity utilisation and those that are due to long-term growth. It is further argued that Labour market reforms may lower wage costs and increase employment, which will cause the output to grow. The production of goods and services may increase, reinforcing with a lag as the capital stock increases due to increased investment. Hence, an upsurge in labour productivity and further increases in labour demand will occur. Another school of thought has argued that unemployment could reduce long-term growth.

Daveri and Tabellini, 2000) has also stated that the more employment a nation has, the higher aggregate income will be, culminating in more savings, and more significant employment.

Aghion and Howitt (1994) and Daveri & Tabellini (2000) have also argued that a higher aggregate income of low skilled workers and higher savings will bring more capital accumulation, thus producing higher growth. However, an effect of working in the opposite direction is that higher employment is likely to reduce the average time spent in the education system before students enter the labour force (Storesletten and Zilibotti, 2000). An increase in population is said to be an increase in the available labour workforce. Nigeria's population has grown from 88,992,220 in 1991 to 140,003,542 in 2006, showing growing rate to be 36.4%, and a similar 55.5% growth of the economy for the same period. The unemployment rate within this period has increased by 74.8%. The oil sector's contribution to the GDP between 1991 and 2006 is 30.5%, while agriculture, which is the primary source of employment in the country, contributed 36.7% with a difference of 6.1 percent. The agricultural sector contributed 32.7% to the Nigerian GDP in 1985 and 41.8% in 2009, with the agronomic sector employing over 50 percent of labour in the country, supposed to decrease the unemployment rate, but rather the rate of unemployment increased 69 percent. The increase in the unemployment rate attributed to the neglect of critical sectors such as agriculture, gross mismanagement of national resources, wasteful spending, and misappropriation of funds. Inadequate infrastructural facilities in the country did not aid rapid industrialisation. We also saw a lack of political will to implement specific policies that can open up the Nigerian economy to private sector participation. One such is the government's unwillingness to implement full deregulation in the oil and gas industry's downstream sector.

V. Summary, Conclusion and Recommendation

a) Summary

The macroeconomic variable, unemployment, is a significant problem confronting the Nigerian economy, among the complex economic and social dimensions. Unemployment, which has a pivotal role to play with an increase in its figures, will lead to monetary drawbacks and vice-versa. Our study did not consider if the relationship between unemployment and growth was negative or positive.

However, various studies reviewed in the literature have concluded that high unemployment has never been favourable to economic growth. Hence it will be useful to maintain that the causality that runs from unemployment to economic growth indicates a relationship showing that unemployment impacts growth. The government's inability to find a lasting solution to this problem has affected economic life, financial activities, and the country's political system as a whole.

Therefore, this paper attempted to investigate the nexus (relationship) between unemployment and output growth in Nigeria. We applied the Augmented

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Dickey-fuller technique in testing the unit root property of the time series and cointegration test to test the long-run relationship between unemployment, output growth, inflation and foreign direct investment.

The unit root test conducted revealed that all variables in the model except unemployment are stationary at the same level and unemployment at first difference. The cointegration test shows a long-run relationship among the variables. The Granger causality test shows unidirectional causality between unemployment, output growth, inflation, and foreign direct investment.

The findings of this study show the significant implications for economic development policy in Nigeria. There is a tremendous and urgent need to tackle unemployment for any economy, especially Nigeria's developing economy.

Therefore, there is a need for strong institutional collaboration for dealing with these multivariate macroeconomic variables; unemployment, output growth, inflation, and foreign direct investment in Nigeria.

b) Conclusion

Unemployment is a canker disease eating deep into the Nigerian economy's fabrics, in contrast to full employment, which alleviates poverty, increasing economic activities that translate into economic growth. The unemployment situation in Nigeria has been a chronic disease, which has increased social vices, causing human capacity under-utilisation; increased poverty amongst the citizenry, which brings social alienation and produces weak purchasing power, etcetera. Although the Nigerian government had previously put policies and programmes meant to combat this menace, these programmes have not impacted the economic growth of Nigeria. Therefore, it has been noted that most of the programs established in Nigeria during the fight against unemployment in the system could not achieve their expected results due to a lack of adequate commitment to the course of the programs. Also, lack of transparency, absence of enabling environment, inadequate funding resulting mainly from mismanagement, among other reasons, are responsible for unemployment in Nigeria. Consequently, rather than reducing the unemployment phenomenon, the country has witnessed an alarming increase in unemployment incidence.

c) Recommendation

To curtail unemployment in Nigeria, we recommend as follows:

i. The agricultural sector should be given a facelift by giving to the sector the highest budgetary allocation.
ii. Give the Youths vocational training and skill acquisition schemes that will make them self-employed.
iii. Creation of value orientation awareness training for our youths.
iv. Indirect manual works be given to most of our youths, predominantly indigenous jobs.
v. The government should create the Public Works Department (PWD) at all levels to give direct works to our unemployed rather than contracting out every work.
vi. Small scale industries or cottage industries be established to absorb our unemployed graduates.
vii. The government at all tiers should ensure that the unemployed human resources are engaged and mobilized for menial jobs.
viii. The promotion of gender equality in all employment practices.
ix. There must be definite direct policies to increasing domestic output for stimulation of employment.
x. The government public expenditure should increase to stimulate aggregate demand; thus, motivating employment generation with optimum human resources utilisation.
xi. The government should employ a policy mix to control inflation.
xii. The government should grant subsidies or flexible credit facilities to all graduates, especially those from the minority areas.
xiii. The development of necessary infrastructure, especially 24 hours of electricity supply, be given.
xiv. The government's debt repayment policy be tilted towards asset acquisition and capacity building both in public and private sectors to attract foreign direct investment.
xv. The government should re-invest foreign direct investment (FDI) profits to create more employment opportunities.
xvi. The government should wage wars against indiscipline and corruption that impede economic growth by reducing investment and increasing the cost of doing business in Nigeria.
xvii. The government should give special and urgent attention to internal security to stretch both local and foreign investors' confidence.
xviii. Removal of socio-political impediments and discrimination to employment such as religious, ethnic, and political bias.
xix. Adoption of the labour-intensive industrialisation strategy, such as the indigenous technological innovation that encourages labour-intensive industrialisation.
xx. An up-to-date and robust labour market information system to relate all available jobs to job seekers and employers of labour, detailing existing vacancies and job specifications, required qualifications, salaries, and other working conditions be promoted.

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References Références Referencias

1. Abbasa, and Peck, J.F. (2010) Human capital and Economic Growth: Pakistan 1960-2003, Comsats Institute of Information Technology, *International Journal of Human and Social Sciences* 5:5 2010 337.
2. Abomaye-Nimenibo, W.A.S (2015); The Socio-Economic Effects of Youth Unemployment in Akwa Ibom State: A Study of Uyo Local Government Area, Akwa Ibom State, Nigeria, Research journali's Journal of Economics, Vol.3, No.6,2015, ISSN2347-8233, PP1-18.
3. Abomaye-Nimenibo, W. A. S. and Inimino, E. E. (2016). An Empirical Analysis of Fiscal Policy Measures and Unemployment in Nigeria. Journal of Social Sciences and Public Policy, Vol. 8, Number 2, Pp. 108-126.
4. Abomaye-Nimenibo, W. A. S. (2016a), The Modus Operandi of Seminar Presentation, Port Harcourt, Nimehas Publishers.
5. Abomaye-Nimenibo, W.A.S (2017), The Concept and Practice of Taxation in Nigeria, Port Harcourt, Nimehas Publishers.
6. Abomaye-Nimenibo, Williams Aminadokiari Samuel; Eyo, Michael Jack; Friday, Hope Chika (2018); An Empirical Analysis of Tax Revenue and Economic Growth in Nigeria from 1980 to 2015, Global Journal of Human –Social Science: F- Political Science, Volume 18 Issue 3 Version 1.0, Year 2018 Online ISSN: 2249-460x & Print ISSN: 0975-587X
7. Adebayo, A. and Ogunrinola, I.O. (2006) "Contemporary Dimensions of Unemployment problem in Nigeria: A special challenge under the National Economic Empowerment and Development Strategy". NES, 2006, Ibadan, Nigeria.
8. Aghion, P. and P. Howitt (1994), Growth and Unemployment, Review of Economic Studies 61.
9. Agiobenebo, T. J. (2003). Public Sector Economics: Principles, Theories, Issues and Applications. (3rd Ed.) Port Harcourt: Lima Computers.
10. Akinboyo, G.B (1987): "Job Creation as a Productivity Measure for Employment Problems in Developing Countries: The Nigeria and Holland Experience", *Increasing Productivity in Nigeria*, National Productivity Centre, Lagos, pp 404-411.
11. Akintoye, I.R. (2003). Reducing Unemployment through the Informal Sector: A Case Study of Nigeria. European Journal of Economics, Finance and Administrative Sciences ISSN 1450-2275 Issue 11.
12. Akpakpan, Bassey A. (2003), Guideline on Project Writing: Introducing Students to Research Through Practical Approach, Revised edition, Uyo, Abaam Publishing Co.
13. Akpakpan E. B. (1994) How to Save the Naira and Nigeria: Macroeconomic in Action. Belt (Nig) Co. (Publishing Divisions), Abak, Akwa Ibom State, Nigeria.
14. Akpakpan, B. E. (1999: 272). The Economy towards a New Type of Economics. Port Harcourt: New Generation Publishers.
15. Alao, O. (2005). *Principles of Economics,* Lagos: Darko Press and Publishers.
16. Aminu U. and Anono, A.Z. (2012). Effect of Inflation on the Growth and Development of the Nigerian Economy (An Empirical Analysis). *International Journal of Business and Social Science. Vol.3 No.10 [Special Issue- May 2012].*
17. Asika Nnamdi (2009), Research Methodology in the Behavioural Sciences Longman Nigeria Plc. Lagos.
18. Arewa A. and Nwakahma C. (2013). Macroeconomic Variables and the Dynamic Effect of Public Expenditure: Long-Term Trend Analysis in Nigeria Journal of Knowledge Management, Economics and Information Technology.
19. Bellemare, D., and Poulin-Simon, L. (1994). "What is the Real Cost of Unemployment in Canada?" Canadian Centre for Policy Alternatives, Ottawa.
20. Awe AA (2013). Unemployment in the Developing Countries. Paper Presented on Unemployment in Nigeria. Federal Polytechnic Ado- Ekiti.
21. Balami, D.H (2006). Macroeconomic Theory and Practice. Salawe prints, Off Leventies, Wulari, Maiduguri.
22. Begg, D; Fisher S, and Dornbusch R (1994), Economics (Fourth edition), McGraw Hill Int. (UK) Ltd.
23. Bello, T. (2003). Attacking unemployment hurdles in the fragile economies of Sub-Saharan Africa: the experience of Nigeria. A Paper Presented At the-Economics for the Future - Conference; On the Occasion Of the Celebration of 100 Years of Cambridge Economics; Cambridge, United Kingdom September.
24. Briggs, J.E (1973) "Unemployment statistics and what they mean". Monthly Labour Bulletin, Washington DC, US Department of Labour.
25. Calmfors, L. and Holmlund, B. (2000). Unemployment and economic growth: A Partial Survey. Swedish Economic Policy Review 7 107-153.
26. Central Bank of Nigeria (2005): Statistical Bulletin, December 2011, CBN, Lagos.
27. Central Bank of Nigeria (2005, 2006, 2009). Statistical Bulletin Vol. 16, 17, 19 December.
28. Chowdhury, A. R. (1986). Monetary and Fiscal Impacts on Economic Activities in Bangladesh A Note. Bangladesh Development Studies. XIV (2): 101-106.
29. Damachi N. A. (2001): "Evaluation of Past Policy Measures for Solving Unemployment Problems", in Unemployment in Nigeria; CBN Bullion Vol. 25, No 4; Oct/Dec.

© 2021 Global Journals

30. Daveri, F. and G. Tabellini (2000), Unemployment, Growth and Taxation in Industrial Countries, Economic Policy 15.
31. Douglason, G.U and Gbosi, A (2006). The Dynamics of productivity and *Unemployment Nexus: Implications for employment generation in Nigeria NES 2006. Annual Conference, Ibadan, Nigeria.*
32. Dollar, D. (1992). "*Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-1985,*" *Economic Development and Cultural Change, 1992, Vol., 40(3): pp. 523-44*
33. Echeverri, R.N. (200): "*Youth Unemployment and Job Perceptions among Youths in Rural South-eastern Nigeria*". *Paper presented at the 2001 conference of Agricultural Society of Nigeria.*
34. Fajana, S. (2000). *The functioning of the Nigerian Labour Market. Lagos: Labonfin and Company.*
35. Federal Office of Statistics (1996). *Social-economic Profile of Nigeria, FOS, Lagos.*
36. Federal Office of Statistics (2005). *Annual Abstract of Statistics 2005 Edition, Lagos.*
37. Fox, M.F. (1983), *Publication Productivity Among Scientists: "A Critical Review" Sociological Studies of Science, Vol. 13, 285-295.*
38. Gbanador, C. (2007). *Modern Macroeconomics; Port Harcourt: Pearl Publishers.*
39. Gbosi, A. N. (2002). *Contemporary Macroeconomic Problems and Stabilisation Policies. Port Harcourt: Automatic Ventures.*
40. Gbosi, A.N. (2005). *The Dynamics of Managing Chronic Unemployment in Nigeria's Depressed Economy. Inaugural Lecture (Series No. 42). Presented at the University of Port Harcourt, 3rd June.*
41. Gbosi, A.N. (2006) Modem Labour Economics and Policy Analysis. Abakaliki, Pack Publishers.
42. Gbosi A. (2012: 61) Government Policy Makers and the Nigerian Economy Thompson and Thompson Nig. Ltd. 35 Victoria Street, Port Harcourt.
43. Gbosi, A. N. (2015). Contemporary Macroeconomic Problems and Stabilisation Policies. Port Harcourt: Automatic Ventures.
44. Global Employment Trends 2013" (PDF). International Labour Organization. January 2013.
45. Granger, C. W. (1986), Development in the Study of Cointegrated Variables; Oxford Bulletin of Economics and Statistics, Pp 214-227.
46. Granger, C. W. J. and P. Newbold, 1973, Some Comments on the Evaluation of Economic Fore-Casts, Applied Economics 5, 35-47
47. Harris, R. I. D. (1995). *Using Co-integration Analysis in Econometric Modeling*", London: Prentice-Hall, Harvester Wheatsheaf. Independence of Regression Residuals," Economics Letters, Vol. 6, pp. 255-259.
48. Hayek, F. A (1960). The Constitution of Liberty. Chicago; University of Chicago Press.
49. Hornby (2006), cited in Abomaye-Nimenibo, W. AS (2016), The Modus Operandi of Seminar Presentation, Port Harcourt, Nimehas Publishers.
50. Imoisi A. I. (2013) An Appraisal of Fiscal Policy Measures and its Implication for Growth of the Nigerian Economy: 1970-2009. Advances in Management & Applied Economics, Vol. 3, No.4, 2013, 193-204 ISSN: 1792-7544 (Print Version), 1792-7552(online) Science Press Ltd, 2013.
51. International Labour Organization (ILO). Employment and Unemployment. Available from: http://www.ilo.org/global/statistics-and-databases/statistics-overview-and-topics/employment-and-unemployment/lang--en/index.htm (accessed 23 June 2012).
52. Iyoha, M. A. & Ekanem O. T. (2002). Introductory Econometrics. Benin City: Mareh Publishers.
53. Johnson Ugoji; Anyaele, B.Sc. (Hons) UNN. Lipsey G.R and Steiner Peter (1981), Economics, Harper and Row publishers, 6th edition, New York, Pp, 668-675.
54. Kahn (1989), cited in Abomaye-Nimenibo, W. AS (2016), The Modus Operandi of Seminar Presentation, Port Harcourt, Nimehas Publishers.
55. Kareem, O. I. (2006). Globalisation and Employment in Developing Countries. In NSE, *Employment Generation in Nigeria: Selected Papers for the 2006 Annual Conference* (pp.341-357). Ibadan: Nigerian Economic Society.
56. Kayode A., Samuel A. & Silas F. A. (2014) The Rising Rate of Unemployment in Nigeria: The Socio-Economic and Political Implications Performance. Port Harcourt: Dominus Printing Company. Global Business and Economics Research Journal ISSN: 2302-4593 Vol. 3 (2): 12 -32.
57. Kerlinger, Fred N, Foundations of Behavioural Research, Holt Rinehart and Winston Inc., 1973, Chapters 1 and 3.
58. Keynes, John Marnard (2007) (1936) The General Theory of Unemployment, Interest and Money.
59. Lawanson O. I. (2007). High Rate of Unemployment in Nigeria: The Consequence of Human Resource Management. 7th Global Conference on Business & Economics. Rome, Italy.
60. Levaice Rosalind and Rebman, Alexander (1976). Macroeconomics: An Introduction to Keynesian – Neoclassical Controversies (Second Edition), Hong –Kong; Pintail Studios.
61. Mankiw, Romer, and Weil, D.N. (1992) "A Contribution to the Empirics of Economic Growth. Quarterly Journal of Economics, 1992, 407-37.
62. Medee P. Nenbee S. (2011) Econometric Analysis of the Impact of Fiscal Policy Variables on Nigeria's Economic Growth. International Journal of Economic Development Research and Investment, Vol. 2 No. 1; April 2011.

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63. Mouly (1970), cited in Abomaye-Nimenibo, W. AS (2016), The Modus Operandi of Seminar Presentation, Port Harcourt, Nimehas Publishers.
64. Muhammad Shakil Ahmad et al. (2011). Unemployment in Nigeria: Implication on the Gross Domestic Product (GDP) over the years. International Journal for Economic Research. Vol 2(1), pp 66-71.
65. National Bureau of Statistics (2010). Labour Force Survey, March 2009. ISSN 07941954. NO. 476 13th May.
66. National Bureau of Statistics (2011). 2011 Annual Socio-Economic Report. Available from: http://*www.nigerianstat.gov.ng/uploads/latestRelease/2ff063b27de8aa15b35f1a6fb04bf472c658d939.pdf (accessed 23 June 2012).*
67. National Bureau of Statistics, Labour Force Survey, Dec. 2012).
68. Njoku, and Ihugba, O.A. (2011). Unemployment and Nigerian Economic Growth (1985-2009). *Mediterranean Journal of Social Sciences, vol. 2,* No. 6, pp. 23-32.
69. Njoku, and Okezie A. I. (2011); Unemployment and Nigerian Economic Growth 1985-2009. Proceedings of the 2011 International Conference on Teaching, Learning and Change organised by *International Association for Teaching and Learning (IATEL).*
70. Nwanna (1981), cited in Abomaye-Nimenibo, W. A. S. (2016), The Modus Operandi of Seminar Presentation, Port Harcourt, Nimehas Publishers.
71. Obadan, M.I. (2000). Promoting Foreign Direct Investment in Nigeria: Training Programme on Foreign Direct Investment Analysis, Promotion and Negotiation. May 22-26, Ibadan, Nigeria.
72. Odusola, A.F. (2001) Nigeria's unemployment problem in the 80s and 90s: Implication for policy directions in the 21st century. NCEMA Policy Seminal Series. Ibadan, Nigeria.
73. Ojukwu, O (1989) "*Fiscal Policy and Economic Growth an Empirical Investigation*" *Journal of Monetary Economics Vol 32 pp. 417-58.*
74. Okafor, Emeka, E. (2011). *Youth Unemployment and Implications for Stability of Democracy in Nigeria. Journal of Sustainable Development in Africa, Vol. 13, No. 1, pp. 358-373.*
75. Okowa, W. J. (1997). *Oil Systemic Corruption, Abdulistic Capitalism and Nigerian Development: A Political Economy (2nd Ed.) Port Harcourt: Paragraphs Publishers.*
76. Oladeji, S. I. (1994): "*Absorption of Educated Manpower into Nigeria's Informal Sector*". *Diagnostic Studies Series 1, NMB, Lagos.*
77. Olubukola S. Adesina, (2013). *Unemployment and Security Challenges in Nigeria. International Journal of Humanities and Social Science Vol. 3 No. 7; April 2013.*
78. Onuchuku O. Adoghor G. (2000). *Macroeconomics: Theory and Application. Email Printing and Publishing Co. Box 473 Uniport P. O. Shopping Complex, University of Port Harcourt.*
79. Osuala E.C. (1982, 2005), *Introduction to Research Methodology. Smithtown. New York; Exposition Press.*
80. Owolabi, A. U. (2011): "*Econometric Evaluation of Government Spending, System of Government and Economic Growth in Nigeria*". *Journal of Economics and Sustainable Development 2, (4).*
81. Phillips, A.W. (1958). "*The Relationship between Unemployment and Rate of Change in Money Wage Rates in the United Kingdom*". *Economica 25 November.*
82. Rafindadi, A.S. (2012). *Macroeconomic Policy, Output and Unemployment Dynamics in Nigeria: Is There Evidence of Jobless Growth? Paper presented at the 53rd Annual Conference of the Nigerian economic society on "Youth Employment and Poverty Reduction in Nigeria". NICON Luxury Hotel, Abuja.*
83. Raheem, M. I. (1993); "Nigeria for Africa: A Case for Labour Export", in Oyejide, T. A. and M. I. Obadan, *Applied Economics and Economic Policy - In Honour of Emmanuel C. Edozien*, Ibadan University Press, Ibadan.
84. Rama, M. (1998). "How Bad is Unemployment in Tunisia? Assessing Labour Market, Efficiency in a Developing Country". *Research Observer* 13(1), 59-78.
85. Sachs, and Warner, A. (1995) "Economic Reform and the Process of Global Integration, Brooking Papers on Economic Activity, 1995, 1: p.1-118
86. Sodipe, O. and Oluwatobi S. (2010). Output and Unemployment Relationship: How Applicable is the Okun's Law to Nigeria.
87. Solow, R. (1956). A Contribution to the Theory of Economic Growth. *Quarterly Journal of Economics*, 65-94.
88. Tom-Ekine, N. (2013). Macroeconomics: Dimensions of Competitive Indicators and Policy Performance. Port Harcourt: Dominus Printing Company.
89. Umo, J. U. (1996); "Introductory Overview" in J. U. Umoh (ed.) *Towards Full Employment Strategy in Nigeria,* National Manpower Board, Lagos.
90. Usman. Garba (1997). Direct Foreign Investment and Economic Growth in Nigerian (1970-1994). An M.Sc. Project.
91. Vandemoortele, Jan (1991); "Employment Issues in Sub-Saharan Africa," *AERC Special Paper No. 14*, August, AERC Nairobi.
92. Vamvakidis, A. (2002) "How Robust is the Growth-Openness Connection? Historical Evidence," *Journal of Economic Growth,* 2002, vol. 7: pp.57–80

© 2021 Global Journals

93. Vedder, Richard; Out Of WORK; Unemployment and Government in Twentieth-Century America.
94. Walterskirchen, E. (1999). *The Relationship between Growth, Employment and Unemployment in the EU.* European Economist for an Alternative Economic Policy Workshop, Barcelona, Spain. http://www.memoeurope.unibremen.de/tser/Walterskirchen_24months.PDF.
95. World Bank (1999); *African Development Indicators 1998/99, the World Bank, Washington, DC.*
96. Ziglar, M. (2006). "Does Economic Growth Exhibit a Different Impact on Job Creation and Job Destruction? *Scottish Journal of Political Economy,* 2006, vol. 53, pp. 672-683

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The Effect of City Conditions on Youth Violence in Mexico a Spatial Econometric Analysis by Metropolitan Area

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Abstract- Using Mexico's Social Cohesion Survey for the Prevention of Violence and Crime (ECOPRED 2014) and the Mexican Intercensal Population Survey (CONTEO 2015) this paper analyses the characteristics and environment factors that influence the violent behavior of young people aged 14 to 24 years within the 47 largest Mexican cities. The existence of spatial correlation between Mexican cities is corroborated and after controlling for it, it is found that factors related to addictions (drug use by young people and their families) and a violent environment around the young (being bullied, robbed, or having violent friends, neighbors, coworkers or classmates) are positively related to the percentage of young people who shout, hit objects, hit people, carry weapons, or have been arrested. Public policies to reduce the use of drugs and to improve the environment where young people live, mainly in their neighborhoods, schools and jobs, will have a direct effect on reducing the violent behavior of young people. And given the confirmed existence of spatial effects, coordinated efforts between nearby cities could multiply the impact of such public policies.

Keywords: *youth, violence, crime prevention, spatial econometrics.*

GJHSS-E Classification: *JEL Code: J13, Z13, K42*



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I. Introduction

For decades, most Latin American countries have suffered high rates of violence and insecurity, to the extent that violence (intentional and unintentional) is the leading cause of death in the 15 to 50 years old population group (Trucco and Ullmann, 2015). For many years, Mexico seemed to be isolated from the wave of violence in Latin America (violence in Mexico used to be focalized in few states and it was associated to "account adjustments" between organized crime groups). However, after 2008, violence in Mexico increased greatly in almost all states (Banxico, 2012).

Mexico is now in a crisis of violence. For example, between 2017 and 2018, the intentional homicide rate in the country increased 14% to reach the alarming level of 27 deaths per 100,000 inhabitants; climbing from the 19 to the 16 place of the list of 230 countries by intentional homicide rate of the United Nations Office on Drugs and Crime (UNOCD, 2018).

The problem is higher at the state and city levels. Some Mexican states present extremely high homicide rates; higher than the most violent countries in the world like El Salvador that recorded in 2017 a crime rate of 61.8 deaths per 100,000 inhabitants. In 2018, the Mexican state of Colima recorded a homicide rate of 95.41 and the state of Baja California recorded a homicide rate of 89.44 (IEP, 2019). To understand the seriousness of this numbers, it is relevant to mention that according to the World Health Organization (WHO), a homicide rate higher than 10 per 100,000 inhabitants can be considered an epidemic of violence. In 2018, 23 of the 32 Mexican states recorded homicide rates higher than 12 (IEP, 2019). In addition, UNODC (2011) shows that the increase in the violence in Mexico is related to the geographical area, that is, the most populated cities have higher homicide rates than the rest of the country.

Beyond homicides, violence in Mexico has escalated in all areas. For example, the average rate of crimes committed with violence in Mexico increased 25.4% between 2015 and 2018, and the country´s average rate of domestic violence increased 38% during the same period of time (IEP, 2019). In the same sense, Mexico´s rate of crime prevalence in 2017 averaged 29,746 victims per 100,000 inhabitants; being the State of Mexico (46,705), Mexico City (43,069) and Baja California (36,578), the states with the highest crime prevalence rates (ENVIPE, 2018).

Violence and crime have negative effects and cost for individuals, society and the economy. For example in 2017, according to the National Survey of Victimization and Perception on Pubic Security (ENVIPE for its acronym in Spanish), in economic terms, the total cost of insecurity in Mexican households amounted 299.6 billion pesos or 1.65% of GDP. Similarly, household´s spending on preventive measures against crime registered 89.1 billion pesos or 0.5% of GDP. Other studies report higher estimated costs: The Institute for Economics and Peace (2018) reported that, in 2017, the economic impact of violence in Mexico was 249 billion dollars or 21% of Mexican GDP.

In addition to economic costs, violence and crime generate other types of costs and consequences that can affect victims and criminals for the rest of their

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lives, especially if they are young. Among the negative consequences for young people who are violent and/or who participate in crime activities are: low educational achievement, problematic social relationships, compromised mental health, loss of health, higher victimization rates, and physical harm (Fagan & Catalano, 2012; Buvinic, Morrison & Orlando, 205; Londoño & Guerrero, 1999). Also, violence and crime can contribute to substantially raise morbidity and mortality rates, particularly among young people (Guerrero, 2008; Griffin et al, 1999; WHO, 2002). Following INEGI (2016b), violence is one of the main causes of mortality in Mexico and following WHO (2016) it causes one in three deaths of adolescent boys in Latin America.

Literature agrees that both violence and crime in young people are phenomena caused by multiple factors such as: individual, family, friends, school and neighborhood characteristics (Herrenkohl et al, 2004; WHO, 2002; Jiménez, 2005). Specifically for Mexico, Mancha (2017) finds that two types of factors increase the likelihood of young individuals (14 to 18 years old) to commit violent acts: factors related to addictions (drugs or alcohol) and violence inside home or in the near environment. On the other hand, using a different definition of a violent profile, Mancha et al. (2019) argue that violence in Mexico is transmitted among young individuals mainly throughout their near environment (neighborhood, school, and workplace) rather than by their own individual characteristics.

Crime economics argues that factors such as poverty, inequality, low levels of education and high crime rates make individuals prone to participate in criminal activities (Becker, 1995). Case and Katz (1991), and Freeman (1996, 1999) have strongly documented that variables such as poverty, unemployment, education, age, and income inequality are important factors in the propensity of an individual to commit violent acts. Thus, if illiteracy, poverty, inequality and crime predominate in a specific city, it is likely to affect individual´s propensity to commit violent and crime acts. And if, in turn, this city is surrounded by other similar cities, there may also be a spatial effect on the violent behavior of individuals.

The concept of influence between regions leads to the use of spatial dependence models, where the idea of adjacency or proximity is key as it is possible that the characteristics of a region affect the characteristics of regions that share a border or that are a certain distance (Elffers, 2003).

The objective of this paper is to study the impact the different environmental factors that could affect the violent behavior of young individuals (14 to 24 years old) in Mexico, including city level factors, such as poverty, unemployment, or lack of access to social security. Furthermore, the use of city level observations allows us to inquire into the spatial interaction of city characteristics and youth violence. That is, cities with high (or low) levels of youth violence or youth delinquency increase (or decrease) the levels of youth violence or youth delinquency in neighboring cities and vice versa. If the hypothesis of spatial interaction is corroborated, it would be necessary to use econometric methodologies to control for the spatial autocorrelation in order to obtain unbiased estimators of the effects of the city´s environment on youth violence in Mexico.

In addition, this paper aims to contribute to increase the knowledge of youth violence in Mexico. The results will allow us to have empirical evidence for the design and targeting of public policies that reduce youth violence and increase the welfare of the Mexican youth.

II. Background

The issue of youth and the problems young people face (lack of opportunities of employment and education, unemployment, informality, teen pregnancy, lack of access to social security, violence, among others) have begun to be relevant among researchers and policy makers in Mexico. On the issue of youth violence and youth crime, it is observed that young Mexicans are more frequently involved in violent and criminal acts, including drug trafficking, organized crime, kidnapping, and homicides. In addition, the age of those who participate in these kinds of acts has been decreasing during the last years.

Although public opinion agrees that the participation of young people in violent and crime acts is becoming more frequent in Mexico, statistical information to corroborate such believes is very limited, without continuity or very recent, and usually dispersed in different (and not always comparable) databases. Also, in many cases, the age of the offender or the victim is not among the data, so it becomes difficult to conduct studies that focus on young people.

This lack of data is one of the causes of the very limited number of academic research from a quantitative approach to the issue of violence and youth in Mexico (Cortéz, 2015; González, 2014). Most existing studies on violence and youth in Mexico are of a qualitative nature and with a sociological, psychological or case study approach. The research presented in this paper aims to collaborate to the understanding of violence and youth in Mexico from a quantitative point of view, based on information on physical and socioeconomic characteristics and with a public policy approach.

In addition to the lack of data, the fact that violence is a complex issue (there exist numerous forms of violence: gender, sexual, physiological, political, and social, among others) and the fact that in the literature there is not consensus about its definition have contributed to the limited exploration and research of the youth and violence topic in Mexico.

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International literature in different disciplines of the social science that have studied the problem of violence and its causes and consequences among young people have not found an unique response that allows us to explain the phenomenon. Rather, it has been found that violence is a multidimensional problem, where individual, family, friends, and environmental characteristics, as well as experiences and exposure to violence all have an impact on youth violent behavior (Herrenkohl et al, 2004; OMS, 2002; Jiménez, 2005). What is a fact is that violence has been associated with youth over time. According to some theories, violence is inherent in youth since the beginning of civilizations as a form of survival, reproduction or rite (Potts & Hayden, 2010).

Given that youth is a period of preparation for life in which individuals accumulate capacities and form social networks so that they can be properly inserted into the social fabric as adults; it could be said that the adequate inclusion in society depends on what is done or not done during this stage of life (Hopenhayn, 2008). Thus, if a person does not respect the law and social norms when young, she/he will hardly do so as an adult; if a young person falls into addiction, violence or crime problems, it gets very difficult to reverse the process as an adult.

Also, the behavior of young people can have an effect of network economies. For example, if many young people are involved in crime activities and other young people observe that the social cost of been involved in such activities is low, there exist a kind of "contagion" towards new young people to get involved in such crime activities. For example, if being dishonest or corrupt has a low moral hazard, more and more young people will accept and abide this mentality. If, on the contrary, young people are formed in environments of values, healthy relationships, and respect, where work and education are important tasks to achieve a better future, and where the moral hazard of committing violent acts is high, both individual and social benefits will be obtained. Hence, young people can contribute to trigger economic growth and social development in their locality and their country (Mancha, 2017).

All these indicate the need to find a way to reduce the likelihood of young people to start their participation in violent and criminal activities. To do so, it is necessary to carry out empirical studies that allow us to identify the contributing factors as well as the mechanisms and instruments that help us prevent the participation of young people in violent and criminal acts. Moreover, it is necessary to generate more information and data at the city and neighborhood level that allow us to understand the phenomenon and to design targeted public policies aimed at reducing youth violence and crime.

III. Literature Review

Violence is the result of a complex network of factors, none of which has an explanatory power on its own and since they are related to each other, it is important to recognize them and know that they do not always occur simultaneously or influence in the same way (Escotto, 2015).

Literature constantly argues that young people exposed to violence (either as witnesses or as victims) are at great risk of developing aggressive and violent behavior patterns. Fehon (2007) and Soto and Trucco (2015) state that domestic violence (including having drug or alcohol abusing parents or having very strict parents), as well as violent neighborhoods are risk factors for triggering violent behavior in the young. Fehon (2007) and Aizer (2009) complement that the exposure of young people to violence and its relationship to problems such as depression, anxiety, post-traumatic stress, alcohol or drug use, aggressive behavior, crime, low academic performance or suicide is frequently documented. And, Fehon (2007) remarks that the continued exposure to violence, whether in the home, neighborhood, school, or media promotes among young people the belief that aggression and violence are normal and acceptable behaviors, thereby increasing its potential for aggressive responses.

Although it has been shown that the structural characteristics of the family (such as size or income) are also important to determine a violent behavior of young people, there is evidence that parental practices have a greater impact on the problem (Kotchick & Forehand, 2002; Stern & Smith, 1995). Fagan (2013), Fagan et al. (2011) and Hoeve et al. (2009) show, using experimental evaluations, that parental practices affect the degree to which adolescents engage in substance use, crime and violence. In addition, Fehon (2007) documents that young people exposed to high levels of violence in their community but living in families with a high degree of cohesion, structure, effective parental practices and strong family ties are less likely to engage in violent behavior than young people who live in more dysfunctional families.

Some authors agree that the economic and social environment in which young people live is one of the main modelers of their behavior (Jencks & Mayers, 1990; Case & Katz, 1991; Plotnick & Hoffman, 1995). Brown (1990) and Brown, Clasen and Eicher(1986) argue that friends, access to resources, distractors, opportunities, exposure to inequality or violence, etc. provoke in the young people behavioral patterns, both positive and negative, that are reflected both in the decisions they make, and in the activities they carry out.

With respect to the environment of the city, various studies highlight the importance of city characteristics such as poverty, inequality, home ownership, as well as the presence of adequate places

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to promote a healthy development of children and youth (sport areas, schools, health clinics, shopping centers) or places that are a source of bad influence (bars or night clubs), are factors that contribute to determining violent and criminal behavior (Kelly, 2000; Levitt & Lochner, 2001; Glaeser et al., 1996; Anselin et al., 2000; Lagrange, 1999).

Akerlof (1997), Akerlof & Kranton (2000), Crane (1991) and Glaeser and Scheinkman (2001) remark that individuals make decisions not only based on their own preferences, but also considering the preferences of their reference group. Wilson (1987, 1996), Massey and Denton (1993), Granovetter (1995) and Jargowsky (1997) argument that if the habitants of a neighborhood show little commitment to work or study, individuals in particular also tend to show little commitment to such activities. And Kain (1968), Offner and Saks (1971), Leonard (1987), Ellwood (1986) and Raphael (1998), using spatial mismatch models, add that individuals who live in segregated neighborhoods work and study less because they have less access to jobs and educational opportunities.

Finally, studies examining the spatial distribution of crime (Anselin et al., 2000; Kakamu et al., 2000; Lagrange, 1999) have shown that certain urban land uses and city characteristics are associated with criminality clusters known as "hot spots". Lagrange (1999) finds a marked concentration of criminal incidence in areas close to other areas that have high levels of unemployment. Elffers (2003) adds that spatial effects are relevant when studying the phenomenon of crime since crime also depends in part on the characteristics of nearby neighborhoods and communities. The author stipulates that the probability of being a criminal is not only determined by family and neighborhood characteristics, but also by the proximity to other communities with high criminal levels.

In Mexico, quantitative studies on violence and youth are limited. Some studies focus on the relationship between victimization and youth and others between crime and youth, but there are practically no studies that quantitatively review the relationship between a violent environment and the consequent violent behavior of young people. One reason for this lack of research is that until 2014, there was not a database that allowed exploring statistically the relationship between violence and youth. In 2015, the Mexican Institute of Statistics and Geography (INEGI) published the Social Cohesion Survey for the Prevention of Violence and Crime (ECOPRED 2014). Once the ECOPRED 2014 was available, new investigations in the subject emerged (Rendón, 2015; Frías & Finkelhor, 2017; Vega-Cauich et al., 2018; Mancha & Ayala, 2018). ECOPRED 2014 is the first database that focuses on exploring the conditions of violence in homes in Mexico.

An early work that related qualitatively the environment and the juvenile delinquency in Mexico is Jimenez (2005). The author argues that the growth of youth violence is linked to the poor economic performance of the country and to the interrelation between poverty and education. In addition, the author suggests that reducing delinquency among young people requires the commitment of the State to ensure a decent life for young people and their families.

Recently, Jusidman et al. (2016) find that the violence growth in Mexico is related, among other things, to the concentration of young people in poorly planned urban environments without infrastructure and without sufficient services. The authors argue that the extensive and unequal growth of cities in Mexico have favored the emergence of youth violence. The authors state that confined people in small spaces inside and outside their homes and the lack of public spaces such as parks, sport fields or green areas have generated "a crisis of coexistence and social cohesion" in Mexico. This lack of social cohesion reduces the possibilities for people to live together and to create bonds of trust as a form of social capital.

IV. The Data

This paper uses information from the Social Cohesion Survey for the Prevention of Violence and Crime (ECOPRED 2014) and from the Mexican Intercensal Population Survey (CONTEO 2015). Both databases were made and published by the Mexican Institute of Statistics and Geography (INEGI).

The ECOPRED 2014 was created with the objective of measuring the risk factors and the situations of exposure to violence and crime that increase the possibility that young population aged 12 to 29 in Mexico replicate similar situations in society later. These factors include the individual context of young people; development and relationships within their families; the influence and interaction with friends and peers; and relationships among members of a community, as well as the social context in general. ECOPRED 2014 is a household oriented survey and is divided in two questionnaires: one applied to the head of household and other applied to the young.

ECOPRED 2014 contains information on young people and their families, friends and neighbors from 997,754 households in 47 cities in Mexico. Information includes characteristics, habits and behavior of the young people, their relationships within and outside their family, the influence and interactions with friends and colleagues in the neighborhood, work and school, the relationships with other members of the community and their perspective of the social context in general. The population that lives in the 47 cities considered in the study is 41 million, which represents around 35 percent of the total population in Mexico. ECOPRED 2014 does not contain information on income, expenditure, job occupation or other socioeconomic characteristics of

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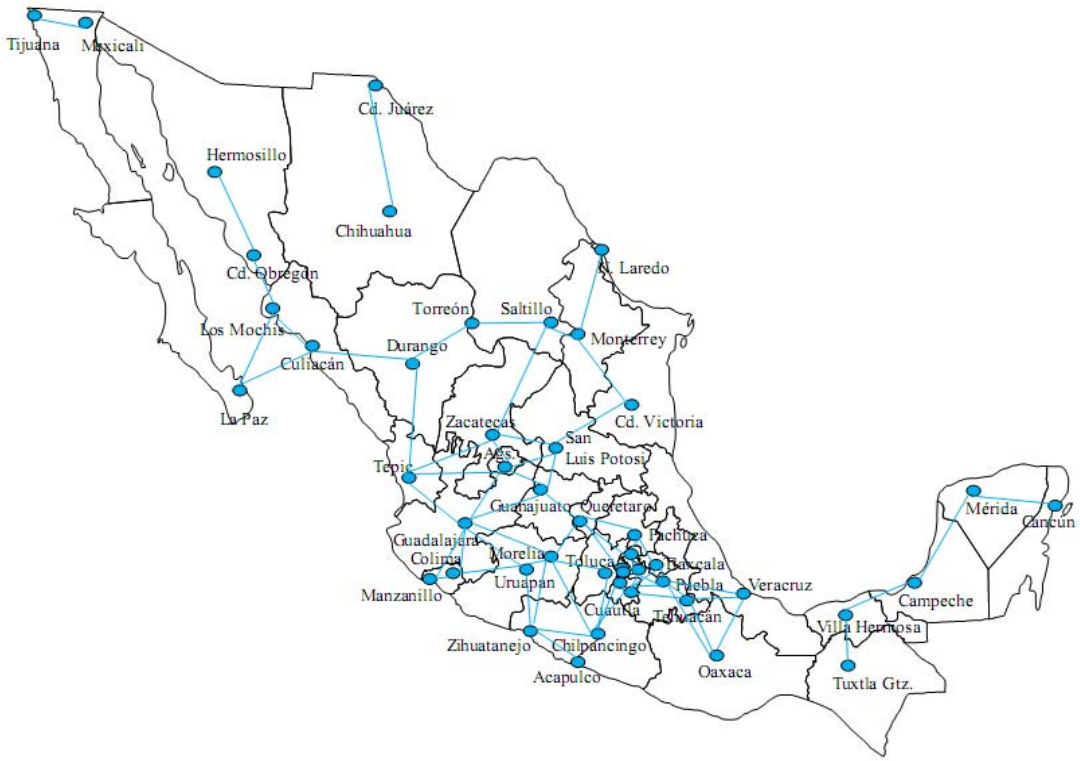
the family. Figure 1 displays the geographical location of the 47 Mexican cities considered in the ECOPRED 2014. The lines that connect them represent cities that are less than 300 kms (187 miles) away of each other.

CONTEO 2015 is the intercensal survey carried out to upgrade the socio-demographic information of the Mexican population between the 2010 and 2020 population censuses. The 2015 intercensal survey gathered information from 6.1 million households. Such a sample size allows us to make inferences about socioeconomic, demographic, and physical characteristics of households at the municipality level and for each one of the Mexican towns larger than 50,000 inhabitants. Information such as average incomes, unemployment rates, fertility rates, or access to water are obtained from this survey.



Source: Own elaboration with data from ECOPRED 2014.

Figure 1: 47 Mexican cities included in the ECOPRED 2014.

It is important to notice that with the information provided by the ECOPRED 2014 it is not possible to know whether a young individual is a criminal or not, but is possible to identify violent behaviors and factors that could be associated with such violent behaviors. Despite its restrictions, this database allows us to conduct a cross-sectional study to inquire into the effects of the characteristics of the neighborhood and the city on the average violent behavior of young people in Mexico. This study is bounded to people between 14 and 24 years old, because there is evidence in the literature that it is in the adolescence and early youth when people begin to engage in violent and criminal activities (Farrington, 2003; Snyder & Sickmund, 2006; Fagan et al., 2011).

V. Descriptive Statistics

Since there is no consensus in the literature on the definition of violence and even less on the definition of youth violence, we adopted the operational definition of Wright and Fagan (2013). Wright and Fagan (2013) define violent acts such as: throwing objects at someone, hitting someone, carrying a weapon or attacking with a weapon, being involved in a gang fight, and committing robbery. With the information that is possible to obtain from the ECOPRED 2014 and seeking to keep this operational definition, we use the following city average variables for young individuals aged 14 to 24, as proxies for youth violence for the 47 self-represented cities considered in ECOPRED 2014: 1) percentage of young people shouting at others (in situations of discussion or conflict); 2) percentage of young people hitting objects (to calm down); 3) percentage of young people hitting people (in situations of discussion or conflict); 4) percentage of young people carrying weapons such as knifes or guns (as a method of defense or to be respected); and 5) percentage of young people who have been arrested.

To make sure that all five variables used as proxy of committing violent acts are different from each

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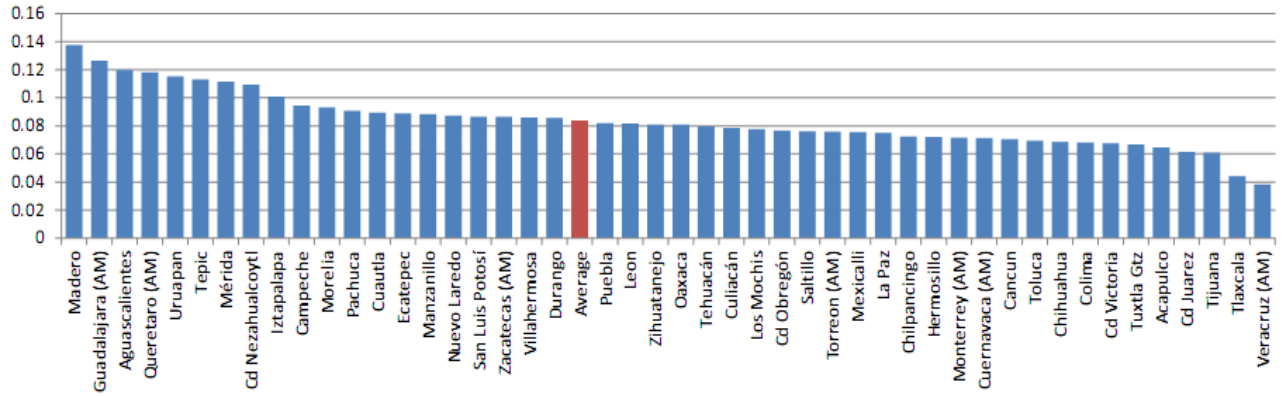
other, simple correlations between these variables were obtained. As we can see in Table 1, all correlations between the five dependent variables are low. The highest correlation values are 0.55 between carrying weapons and having been arrested and 0.44 between carrying weapons and hitting objects.

Table 1: Dependent Variables, correlation coefficients.

	Shouting	Hitting objects	Heating people	Weapons	Arrested
Shouting	1				
Hitting objects	0.3621	1			
Hitting people	0.3625	0.1136	1		
Weapons	0.2449	0.4418	0.4183	1	
Arrested	0.1665	0.3458	0.1629	0.5562	1

Source: Own estimations with data from ECOPRED 2014.

Figure 2 presents the percentage of young people (14 to 24 years old) who report committing the violent act of shouting for the 47 cities reported in ECOPRED 2014. In average, 8.4 percent of all young people in this study reported shouting at others in situations of discussion or conflict. The cities of Gustavo A. Madero (inside Mexico City) and Guadalajara presented the highest percentages with 13.8 and 12.6 respectively while Tlaxcala and Veracruz presented the lowest percentages.



Source: Own estimations with data from ECOPRED 2014

Figure 2: Percentage of youth shouting at others, by city.

The cities with the largest populations are Guadalajara (4.5 million), Monterrey (4 million) and Iztapalapa (inside Mexico City) (2 million), but the cities with the highest percentages of young people are Tlaxcala (32.9%), San Luis Potosí (26.3%), and Cd. Victoria (26.1%). The average percentage of young people in the 47 cities considered is 20.8 percent.

Table 2 reports descriptive statistics for the five variables used as proxy of committing violent acts. In average, for the whole sample of 47 cities, 8.4 percent of young people shout at others, 8.9 percent hits objects to calm down, 4.5 percent hit other people, 3.1 percent carry weapons such as knifes or guns and 6.8 percent have been arrested. It is interesting to notice that a higher percentage of young people report being arrested than carrying weapons or hitting other people. Been arrested could result from other violence risk activities such as drinking alcohol or using drugs.

Table 2: Dependent Variables, descriptive statistics.

Variable	Obs	Mean	Std Dev	Max	Min	I-Moran
Shouting	47	8.4%	0.0201	Madero (13.7%)	Veracruz (3.8%)	2.69*
Hitting objects	47	8.9%	0.0183	Mexicali (13.5)	Cd. Juárez (5.7%)	3.17*
Hitting people	47	4.5%	0.0219	Aguascalientes (10%)	Tijuana (1.2%)	2.72*
Weapons	47	3.1%	0.0113	León (7.1%)	Culiacán (1.1%)	2.26
Arrested	47	6.8%	0.0271	León (14.3%)	Villahermosa (2.1%)	3.88**

Source: Own estimations with data from ECOPRED 2014.
*Statistical significance level: ** 95%; * 90%.*

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The three cities with the highest percentages of young people who report shouting are Gustavo A. Madero (inside Mexico City) (13.7%), Guadalajara (12.6%) and Aguascalientes (11.9%) and the three cities with the lowest percentages are Tijuana (6.1%), Tlaxcala (4.4%) and Veracruz (3.8%). The three cities with the highest percentages of young people who report hitting objects are Mexicali (13.5%), Uruapan (12.3%) and Guadalajara (11.9%) and the three cities with the lowest percentages are Ecatepec (part of Mexico City´s Metropolitan Area) (5.8%), Tlaxcala (5.7%) and Ciudad Juárez (5.7%). The three cities with the highest percentages of young people who report hitting other people are Aguascalientes (10%), Morelia (9.3%) and Nuevo Laredo (9%) and the three cities with the lowest percentages are Zacatecas (1.7%), Ciudad Obregón (1.5%) and Tijuana (1.2%). The three cities with the highest percentages of young people who report carrying weapons are León (7.1%), Hermosillo (4.9%) and Tehuacán (4.8%) and the three cities with the lowest percentages are Acapulco (1.4%), Tuxtla Gutiérrez (1.4%) and Culiacán (1.1%). Finally, the three cities with the highest percentages of young people who report being arrested are León (14.3%), Aguascalientes (12.6%) and Manzanillo (12.2%) and the three cities with the lowest percentages are Acapulco (3.1%), Nezahualcoyotl (part of Mexico City´s Metropolitan Area) (2.6%) and Villahermosa (2.1%). The cities of Guadalajara, Aguascalientes and León appear at least two times at the top three of the lists. On the other hand, the cities of Tijuana, Tlaxcala and Acapulco appear at least two times at the bottom of the lists.

The last column of table 2 reports a measure of spatial autocorrelation that is widely used in the literature to know the spatial concentration of a certain variable: the I-Moran Chi-2 statistic (Cliff & Ord, 1973). Although the I-Moran statistic does not indicate magnitude, it can be noticed that four of the five dependent variables have a significant global spatial autocorrelation.

From the questionnaires of the ECOPRED 2014 we selected 15 independent variables (*X*) that represents city´s average characteristics of the young people (14 a 24 years), their families, their friends, their neighbors, their coworkers and their classmates; and from the CONTEO 2015 database we obtained 6 independent variables (*Z*) that account for social and economic conditions of the city. Some other variables available in ECOPRED 2014 and CONTEO 2015 were not considered due to the high collinearity with the variables already included or the high number of missing observations. Appendix Table A1 presents a brief description of each variable selected.

Table 3 shows the descriptive statistics of such independent variables. The top section describes the city level variables obtained from ECOPRED 2014. The average city has 51 percent of young men, 61 percent of their youth live in a home with both parents, 62 percent study and only 38 percent work fulltime. With respect to youth activities, 49 percent report exercise regularly, 26 percent report ever getting drunk, 8 percent report having used a soft drug such as marijuana, and 3 percent report having used hard drugs such as cocaine. 29 percent of young people declare being bullied and 28 percent declare being robbed. With respect to their environment, 38 percent of young people admit that at home their family push, shut or criticize, 3 percent admit that in their house there is at least a person who dinks, smokes, uses drugs or bets a lot, 47 percent report having at least a friend who drinks alcohol, smokes, takes drugs, commits violent acts, carries weapons or has been arrested, 49 percent declares that in their neighborhood there is graffiti, people drinking in the streets or people playing music at a very high volume, and 43 percent comment that in their school or work there is physical or verbal violence or there is alcohol or drug use.

Table 3: Independent Variables, descriptive statistics.

Variable	Obs.	Mean	Std. Dev.	Min	Max	I-Moran
Males	47	0.51	0.029	0.45	0.58	0.00
Both parents	47	0.61	0.044	0.53	0.70	4.35**
Study	47	0.62	0.059	0.46	0.72	0.00
Work	47	0.38	0.057	0.27	0.55	0.00
Sports	47	0.49	0.051	0.38	0.60	0.83
Drunk	47	0.26	0.049	0.17	0.34	10.19***
Soft drugs	47	0.08	0.028	0.04	0.15	1.27
Hard drugs	47	0.03	0.011	0.01	0.05	0.12
Bullied	47	0.29	0.042	0.20	0.37	0.31
Robbed	47	0.28	0.066	0.18	0.47	45.12***
Violent family	47	0.38	0.047	0.27	0.50	1.85

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Vicious family	47	0.03	0.012	0.01	0.07	1.61
Bad friends	47	0.47	0.065	0.37	0.61	8.78***
Bad neighbors	47	0.49	0.099	0.29	0.72	2.94*
Bad school	47	0.43	0.061	0.27	0.55	52.19***
Poverty	47	0.42	0.088	0.25	0.66	7.92***
Education gap	47	0.16	0.040	0.08	0.28	3.47*
Health	47	0.29	0.082	0.12	0.44	51.57***
Social Security	47	0.50	0.093	0.30	0.69	47.05***
Services	47	0.10	0.089	0.01	0.37	8.46***
Unemployment	47	0.04	0.008	0.02	0.06	0.33

Source: Own estimations with data from ECOPRED 2014 and CONTEO 2015.
*Statistical significance level: *** 99%; ** 95%; * 90%.*

The bottom section of table 3 lists the city level independent variables obtained from CONTEO 2015. The first five variables presented are official numbers calculated by the Mexican Council for the Evaluation of Social Development Policy (CONEVAL) and the last variable was calculated directly from the CONTEO 2015 database. The average city has 42 percent of its population living with an income below CONEVAL´s poverty line, 16 percent of its 3 to 15 years old population do not attend a formal education center (education gap), 29 percent of its population do not have access to any public or private health care or health insurance, 50 percent do not have access to social security, and 10 percent do not have access to basic services (water, drainage, electricity and gas). For a better description of CONEVAL´s multidimensional poverty measures please refer CONEVAL (2010). The average city has an unemployment rate of 4 percent.

In order to verify the absence of multicollinearity in the regressions, simple correlations between independent variables were obtained and the statistical VIF tests were performed. In general, correlations are low. The average correlation is 0.28 and the highest correlations is 0.65 between the percentage of young people who report that in their neighborhood there is graffiti, people drinking in the streets, or people playing music at a very high volume (Bad neighbors) and the percentage of young people being robbed (Robbed). In the VIF tests, the values for all the independent variables do not exceed 6 and have an average value of 3.72. VIF values are not high, since it is considered that there is evidence of multicollinearity when the VIF value is greater than 10. In order to save space, correlation coefficients and VIFs are not presented but can be provided by the authors upon request.

VI. Empirical Strategy

According to Elffers (2003), the propensity of an individual to commit a violent act can be explained by the characteristics of the social and economic environment in which people live and by the characteristics of the surrounding regions. Therefore, the rates of violence and criminality in a city depend on the characteristics of the city and its inhabitants, as well as on the influence of nearby cities.

In order to estimate the impact of certain factors on the probability that a young person between 14 and 24 years old commits a violent act, we specify the following linear regression model corrected by a possible spatial dependence of the data:

$$Y=X\beta+Z\gamma+\varepsilon$$

where Y is one of the five city proxies for youth violence: 1) percentage of young people shouting at others; 2) percentage of young people hitting objects; 3) percentage of young people hitting people; 4) percentage of young people carrying weapons such as knifes or guns; and 5) percentage of young people who have been arrested; X is the vector of characteristics of the young people of the city, including their families, friends, neighbors, coworkers and classmates listed in table 3 and explained in Appendix Table A1, Z is the vector of characteristics of the city such as poverty measures or unemployment, and ε is an error term.

To consider the possible spatial autocorrelation or spatial dependence of the data, we assume that geographically located observations are related to nearby observations following certain patterns. Thus, to handle the possible correlation of the data, the use of spatial econometric techniques is needed. It is worth to mention that if the existence of spatial autocorrelation is identified, if it is not controlled, there is a risk of obtaining biased estimators, which would lead us to make erroneous inferences (Dubin, 1998).

Hence, the relationship between the percentage of young people committing violent acts within a city and the own characteristics of the city should be measured considering that the percentage of young people committing violent acts depends also on the percentage of young people committing violent acts in nearby cities as well as other spatially correlated unobservable characteristics; as follows:

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$$Y = \rho WY + X\beta + Z\gamma + \varepsilon \text{ where } \varepsilon = \lambda W\varepsilon + u \text{ and } u \sim N(0, \sigma^2 I_n)$$

where ρ is a scalar and represents the spatial dependence parameter, and W is a matrix of spatial weights. The error vector ε follows a spatial autoregressive process, where λ represents the parameter of spatial dependence of the errors. Finally, u is a vector of residuals that are distributed normally. It is important to mention that the term WY generates a regression bias, so it must be estimated by Maximum Likelihood instead of OLS (Anselin, 1998; Lee, 2004).

If it is thought that spatial dependence is inherent only to the dependent variable (observable factors), then we have a model known as SAR or Spatial Autoregressive Model, where λ=0. If it is thought that spatial dependence exists only through the error term, that is, when there are omitted, non-measurable or unobservable variables that relate to nearby regions, then we have a model known as SEM or Spatial Error Model, where ρ=0.

The first step when applying spatial econometrics is to define what is considered as a neighbor city, because this definition will allow us to construct a spatial weights matrix (W) to observe spatial correlation patterns. There is not an optimal distance in the literature to consider two cities as neighbors. We experimented with different distances; however, distances lower than 200 kilometers decreased considerably the number of defined neighbor cities reducing the capacity of the model to capture spatial effects; and distances over 400 kilometers increased the number of neighbor cities to almost all cities reducing also the capacity of the model to capture spatial effects. Hence, in this paper we consider a city as a neighbor city if the geographical distance between two cities does not exceed 300 kilometers (187 miles). We also used the inverse distance between cities to construct the spatial weights matrix, however, we didn´t find a good fit with this measure.

Once the spatial weights matrix (W) is defined, the next step is to define if the spatial autocorrelation in the model is due to observable factors (SAR), factors inherent to the error term (SEM), or both. Two popular statistics used in the literature to choose the spatial econometric model that best explains the spatial behavior of the data are the I-Moran Chi-2 statistic and the individual statistical significance tests for the spatial dependence parameters λ and ρ (Anselin, Bera & Florax, 1996).

Table 4 presents the I-Moran statistics and the individual dependence parameters significance tests for our definition of spatial influence: 300 kilometers. Based on the results in Table 4 we can conclude that there is spatial autocorrelation and that in the case of the violence definitions of shouting, hitting objects and arrested the most appropriate spatial autocorrelation model is the SEM model; while in the case of the violence definitions of hitting people and weapons we decided to include both SEM and SAR spatial effect components in the model.

Table 4: Spatial Autocorrelation Analysis.

	I-Moran Statistics		Individual spatial coefficients	
	SEM	SAR	SEM (λ)	SAR (ρ)
Shouting	2.69 *	2.71 *	-2.681424 ***	-0.1001718
Hitting objects	3.17 *	0.21	-5.254902 ***	0.0496059
Hitting people	2.72 *	1.99	-2.045442 ***	-0.4048513 **
Weapons	2.26	0.46	-6.751464 ***	-0.2538469 **
Arrested	3.88 **	14.75 ***	-4.230271 ***	0.031207

Source: Own estimations with data from ECOPRED 2014 and CONTEO 2015.
*Statistical significance level: *** 99%; ** 95%; * 90%.*

The empirical strategy considers the regression estimation of two models. The first model ignores the presence of spatial autocorrelation (OLS) while the second model controls for the spatial behavior of the data (SEM or SEM+SAR, depending on the violence definition).

VII. Results

Table 5 displays the regression results without controlling for the presence of spatial autocorrelation (OLS) while table 6 displays the regression results controlling for the spatial behavior of the data (SEM or SEM+SAR) for the five definitions of youth violence: 1) percentage of young people shouting at others; 2) percentage of young people hitting objects; 3) percentage of young people hitting other people; 4) percentage of young people carrying weapons such as knifes or guns; and 5) percentage of young people who have been arrested.

The first thing to note is that the five OLS regressions present considerably fewer numbers of significant variables and relatively lower R-square

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statistics. Also, OLS coefficients are consistently smaller and the F-statistic for hitting people is not statistically significant. These differences confirm that if we do not control for the presence of spatial autocorrelation, we will obtain biased estimated coefficients, as well as relatively lower goodness of fit.

Table 5: OLS regression results.

	Shouting	Hitting Objects	Hitting People	Weapons	Arrested
Males	-0.1162	0.1840*	-0.215	0.0233	0.0131
Both parents	0.1678*	0.0456	0.134	0.078	0.1233
Study	0.0252	0.014	-0.0141	-0.0028	0.0074
Work	-0.0617	-0.0214	0.0054	0.0156	0.1123
Sports	-0.0191	-0.1112*	0.0065	-0.0374	0.1176
Drunk	-0.018	0.0213	0.0912	0.0803*	0.0678
Soft drugs	0.1189	-0.0346	0.0241	0.0343	0.2486
Hard drugs	-0.3207	0.4008	-0.2757	0.1205	0.0849
Bullied	0.036	0.1438	0.1243	0.0222	0.1466
Robbed	-0.1295	-0.1264*	0.1790*	0.0249	-0.1147
Violent family	-0.0096	0.0804	0.0577	0.0515	-0.0152
Vicious family	0.4385	-0.0253	-0.4395	0.1848	0.1374
Bad friends	0.1055	0.0941	0.1779	0.0088	-0.0466
Bad neighbors	0.1032*	0.0932*	-0.0959	0.0056	0.0928
Bad school	0.0044	-0.1263	-0.0597	-0.0686	-0.1135
Poverty	0.0662	0.0708	0.0355	0.0639*	0.0523
Education gap	0.0664	-0.0491	-0.1666	-0.0738	-0.0073
Health	0.0062	0.0111	-0.1272	-0.0092	-0.0642
Social Security	0.054	0.0144	0.1401*	0.0112	-0.0346
Services	-0.0416	0.0729	0.0485	0.0249	-0.044
Unemployment	-0.7708	-0.4381	0.281	-0.5981*	-0.4195
Constant	-0.0615	-0.0896	-0.0845	-0.0566	-0.11
N	47	47	47	47	47
F	2.0787**	2.3579**	1.6044	2.5732**	2.2312**
adj_R2	0.33	0.3827	0.2163	0.418	0.3598

Source: Own estimations with data from ECOPRED 2014 and CONTEO 2015.
*Statistical significance level: *** 99%; ** 95%; * 90%.*

For example, with respect to the violent act of shouting, the OLS estimated coefficient of Bad neighbors in table 5 indicates, with a statistical significance of 90%, that an increase in one percentage point in the percentage of young people who report that in their neighborhood there is graffiti, people drinking in the streets, or people playing music at a very high volume increases the percentage of young people shouting at others in 0.10 percentage points. On the other hand, coefficient of Bad neighbor in the spatial autocorrelation model (SEM) presented in table 6 presents, with a better statistical significance of 95%, a more conservative effect of 0.08.

Given that due to the presence of spatial autocorrelation the SEM and SEM+SAR models present unbiased and more efficient estimators, in the following lines we will discuss the results obtained by the spatial corrected models, leaving the results of the OLS model as a benchmark. The first two rows of table 6 presents the estimated coefficient of the parameters of spatial dependence: λ-lambda for the SEM model and ρ-rho for the SAR model. All coefficients are statistically significant for the five regressions, corroborating the presence of spatial autocorrelation.

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Table 6: Spatial Autocorrelation Adjusted regression results.

	Shouting (SEM)	Hitting Objects (SEM)	Hitting People (SEM+SAR)	Weapons (SEM+SAR)	Arrested (SEM)
λ-lambda	-2.6788***	-5.2538***	-2.0454**	-6.7515***	-6.0074***
ρ-rho			-0.4049**	-0.2538**	
Males	-0.1920***	0.2412***	-0.2072**	0.0313	0.0961
Both parents	0.1220**	0.0145	0.1247*	0.0828***	0.1241**
Study	-0.0846*	-0.0219	-0.0383	0.0346*	0.1172***
Work	-0.1475***	-0.0052	0.0118	0.0229	0.1109**
Sports	-0.0421	-0.1062***	-0.0369	-0.0465**	0.0377
Drunk	-0.081	0.0232	0.2223**	0.0969***	0.1827***
Soft drugs	0.2849**	-0.0924	0.066	0.0883	0.4838***
Hard drugs	-0.2013	0.5294***	-0.7990**	-0.1007	-0.4747*
Bullied	0.0529	0.1876***	0.1066	0.0618*	0.2060***
Robbed	-0.1993***	-0.1377***	0.3073***	0.034	-0.2439***
Violent family	0.004	0.0185	0.1182	0.0483	-0.0421
Vicious family	0.3077	0.2842	-0.8138***	0.2238**	0.6862***
Bad friends	0.1172*	0.0579	0.2482***	0.033	-0.1424**
Bad neighbors	0.0871**	0.0654*	-0.1300***	0.0359*	0.1520***
Bad school	0.1305**	-0.0541	-0.0731	-0.1092***	-0.1776***
Poverty	-0.0115	0.0323	0.0945*	0.1312***	0.1551***
Education gap	0.0693	-0.0106	-0.2809***	-0.1155***	0.079
Health	-0.0658	0.0678	-0.1646***	0.0087	0.0763
Social Security	0.0563	-0.0463	0.1967***	0.0056	-0.1557***
Services	0.0157	0.0345	0.0973**	0.0242*	-0.0847***
Unemployment	-0.1759	-0.4757	-0.1341	-0.9913***	-1.0481**
Constant	0.1038	-0.0519	-0.1285	-0.1169***	-0.1732***
N	47	47	47	47	47
chi2	257.55***	655.76***	105.58***	986.36***	3579.18***
psd_R2	0.5242	0.5518	0.5418	0.6354	0.5414

Source: Own estimations with data from ECOPRED 2014 and CONTEO 2015.
*Statistical significance level: *** 99%; ** 95%; * 90%.*

As we can see in table 6, after controlling for the presence of spatial autocorrelation, having a higher percentage of young men in a city is negatively related to the percentage of young people shouting at others and hitting other people. On the other hand, the percentage of young people living with both parents is positively related to the percentage of young people shouting at others, hitting other people, carrying weapons, and been arrested. Also, the percentages of young people studying and working fulltime are negatively related to the percentage of young people shouting at others but positively related to the percentage of young people carrying weapons and/or been arrested.

These first results are counterintuitive; we may expect young men to be more violent and young people living with both parents, working fulltime or studying to be less violent. Although individual characteristics do play a role in the violent behavior of young people, these counterintuitive results may indicate that other characteristics of the environment play a more active way on the aggregated behavior of young people.

The percentage of young people who practice sports regularly is negatively related to the percentage of young people hitting objects and carrying weapons.

As expected, the percentage of young people who have ever got drunk is positively related to the percentage of young people hitting other people, using weapons and been arrested. The percentage of young people who consume or have used soft drugs such as marijuana, solvents or hallucinogenic mushrooms is positively related with the percentage of young people

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shouting at others or been arrested. And the percentage of young people who consume or have used hard drugs such as cocaine, amphetamines or crack is strongly positively related with the percentage of young people hitting objects; however, this last variable is negatively related to the percentage of young people hitting others and been arrested.

In the same sense, the percentage of young people who report that in their house there is a person who drinks, smokes, uses drugs or bets a lot (Vicious family) is positively related to the percentage of young people using weapons or been arrested. And the percentage of young people who report having friends that drink alcohol, smoke or use drugs (Bad friends) is positively related to the percentage of young people shouting at others or hitting other people.

Although some of the results are counterintuitive (negative coefficients), most estimated coefficients of all variables related to a hostile environment where young people live (Bullied, Robbed, Violent family, Bad friends, Bad neighbors, and Bad school) are positively related to the percentage of young people committing violent acts. For example, the percentage of young people who report that in their neighborhood there is graffiti, people drinking in the streets, or people playing music at a very high volume (Bad neighbors) is positively related to the percentage of young people shouting at others, hitting objects, carrying weapons and been arrested. And for example, a ten percentage points increase in the percentage of young people been bullied increases the percentage of young people hitting objects in 1.8 percentage points, and a ten percentage points increase in the percentage of young people been robbed increases the percentage of young people hitting other people in 3 percentage points.

Finally, the city´s poverty rate, measured by CONEVAL as the percentage of families with income below the welfare line is positively related to the percentage of young people hitting other people, carrying weapons and been arrested. However, contrary to expectations, COVEVAL´s educational gap (Education gap), lack of access to health services (Health), lack of access to social security (Social Security), and lack of access to basic housing services (Services), and the unemployment rate, which are negative indicators (i.e., the bigger the number, the more bad it is), are negatively related to the percentage of people carrying weapons, hitting other people, or been arrested.

VIII. Conclusions

Using data from ECOPRED 2014 and CONTEO 2015 and after controlling for the existence of spatial correlation between the 47 Mexican main cities, this paper studies some of the risk factors and characteristics of the Mexican cities that make young people (from 14 to 24 years old) to develop violent behaviors. We define violent behavior as the execution of the violent acts of shouting at others, hitting objects, hitting people, carrying weapons and have been arrested.

Previous literature of youth violence in Mexico has determined risk factors associated to the propensity of young people to commit violent acts using microdata and conventional econometric analysis. However, this paper incorporates the use of spatial econometrics and corroborates the existence of spatial dependence on youth violence among Mexican cities. It should be remembered that if the spatial correlation is not controlled, there is a risk of obtaining biased results and invalid inferences.

It is found that, after controlling for the existence of spatial dependency among Mexican cities, there are two main types of risk factors associated with the percentage of young people committing violent acts: one has to deal with drug additions of the young people and their families and the other with a violent environment close to them.

In the case of the risk factors related to addictions, it is found that the percentage of young people consuming alcohol and drugs and the percentage of young people who report that in their house there is somebody who consumes alcohol or drugs are positively related to having larger groups of young people committing violent acts. In this way, a public policy aimed at preventing the participation of young people in violent acts should consider addressing the problem of additions (both for young people and for their families).

The other risk factor consistently found in the results is related to the violent environment where young people live. It is found that the percentage of young people who have ever been bullied or robbed and the percentage of young people who report having violent friends, neighbors, coworkers or classmates are positively related to larger percentages of young people committing violent acts. These findings allow us to affirm that violence generates violence and that violence can be considered an epidemic (this is, it is contagious!).

Thus, a public policy that seeks to prevent the participation of young people in violent acts must also focus on combating violence in public places (streets, schools, workplaces) through specific campaigns and programs that promote reporting violent acts to the authorities and that ensure a punishment for those who commit any reported type of violence. Internationally it has been found that family-focused programs such as “schools for parents”, “safe schools” and “drug free schools” have good results in decreasing the percentage of young people participating in violent acts.

Public policies focusing on improving the environment where young people live, mainly in the

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streets, schools and workplaces, as well as reducing the use of drugs and alcohol, will have a direct effect on reducing the violent behavior of young people. In addition, since the existence of spatial effects has been corroborated, individual efforts made by cities to reduce the violence of their youth, in addition to having an effect on their own youth, will have an effect on the violent behavior of youth in nearby cities. Therefore, joint efforts of neighboring cities to fight youth violence could have greater impacts than individual efforts made by single cities.

Finally, it is worth remembering, as discussed in the literature section, that public prevention policies, designed and implemented at the local level, by municipal authorities or by the community, are usually more effective than policies designed from the center of the country and implemented in a generalized way. Likewise, a public policy regarding the prevention of youth violence must be consistent over time and for this it is necessary to have technical capabilities, political will, as well as long-term human and financial resources since the results of an effective violence prevention policy are not visible in the short term.

References Références Referencias

1. Aizer, A. (2009). Neighborhood Violence and Urban Youth, Gruber J. (editor), The problems of disadvantaged youth: An economic perspective, pp. 275-307, Chicago, University of Chicago Press.
2. Anselin, L. (1988). Spatial econometrics: methods and models, *Kluwer Academic Publishers*, Dordrecht.
3. Anselin, L. (2002). Spatial Externalities, spatial multipliers and spatial econometrics. International *Regional Science Review*, Vol. 26, No. 2.
4. Anselin, L. (2003). GeoDaTM 0.9 User´s Guide.
5. Anselin L. A. Bera y R. Florax (1996). Simple diagnostic tests for spatial dependence, *Regional Science and Urban Economics*, Vol.26, No.1, pp. 77–104.
6. Anselin, L., J. Cohen, D.Cook, W. Gorr & G.Tita (2000). Spatial Analyses of Crime. *Criminal Justice*.
7. Becker, G.S. (1995). Economics of Crime. The Federal Reserve Bank of Richmond, Chicago, 1995.
8. Case, A., & L. Katz (1991). The Company You Keep: the Effects of Family and Neighborhood on Disadvantaged Youths. NBER.
9. Cliff, A., & J. Ord (1973). Spatial Autocorrelation. London, Pion.
10. CONEVAL (2010). "Methodology for Multi-dimensional Poverty Measurement in Mexico" consulted https://www.coneval.org.mx/rw/resource/coneval/med_pobreza/MPMMPingles100903.pd
11. Cortez, W. (2015). Estudios sobre victimización, revisión bibliográfica, Cortez, W. W. (coord.), Ensayos sobre victimización, percepción de inseguridad y corrupción en México, (17-32), México, Universidad de Guadalajara.
12. Dubin, R. (1998). Spatial autocorrelation: a primer, *Journal of House Economics*, Vol. 7, No. 4, pp. 304–327.
13. Elffers, H. (2003). Analysing Neighbourhood Influence in Criminology. *Statistica Neerlandica*, vol.57, nr.3.
14. Escotto Quesada, T. (2015). Políticas y prácticas de prevención de la violencia que afecta a la juventud en Centroamérica: Análisis comparativo, Santiago de Chile, CEPAL. Consulted in http://www.cepal.org/es/publicaciones/39820-politicas-practicas-prevencion-la-violencia-que-afecta-la-juventud-centroamerica
15. Fagan, A. & R. Catalano (2012). What Works in Youth Violence Prevention: A review of the Literature, *Research on Social Work Practice*, Vol. 23, No. 2, pp. 141-156.
16. Fagan, A. (2013). Family-Focused Interventions to Prevent Juvenile Delinquency. A case where science and policy can find common ground, *Criminology and Public Policy*, Vol. 12, issue 4, pp. 617-650.
17. Fagan, A., L. Van horn, S. Antaramian, & J. Hawkins (2011). How Do Families Matter? Age and Gender Differences in Family Influences on Delinquency and Drug Use, *Youth Violence and Juvenile Justice*, Vol. 9, No. 2, pp. 150-170.
18. Farrington, D.P. (2003). Developmental and life-course criminology: Key theoretical and empirical issues-the 2002 Sutherland Award address, *Criminology*, Vol. 41, pp. 221-255.
19. Fehon, D. C. (2007). From Victim to Aggressor: The Cycle of Youth Violence, *Psychiatric Times*, Vol. 24, No. 7, pp. 44.
20. Freeman, R.B. (1996). Why do so many young American men commit crimes and what might we do about it? *Journal of Economic Prespectives*, Vol.10, No.1.
21. Freeman, R.B. (1999). Economics of Crime. *Handbook of Labor Economics*, Vol.3.
22. Frías, Sonia M., David Finkelhor (2017), "Victimization of Mexican Youth (12-17 years old): A 2014 national survey", *Child Abuse & Neglect*, Vol.67, May, pp. 86-97. https://doi.org/10.1016/j.chiabu.2017.02.013
23. Gleaser, E., B. Sacerdote & J. Sheinkman. (1996). Crimen and Social Interactions. *The Quarterly Journal of Economics*.
24. González Andrade, S. (2014). Criminalidad y crecimiento económico regional en México, *Frontera Norte*, Vol. 26, No. 51, pp. 75-111.
25. Griffin, K. W., Scheier, L., Botvin, G., Diaz, T., & Miller, N. (1999). Interpersonal Aggression in urban minority youth: mediators of perceived neighborhood, peer, and parental influences,

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Journal of Community Psychology, Vol. 27, No. 3, pp. 281-298.
26. Guerrero, R. (2008). ¿Qué sirve en la prevención de la violencia juvenil?, *Salud pública de México*, Vol, 50, Supl.1, pp. 86-92.
27. Herrenkohl, T.I, I.J. Chung, & R.F. Catalano (2004). Review of research on predictors of youth violence and school-based and community-based prevention approaches, Allen-Meares, P. & Fraser, M. W. (eds.), Intervention with children and adolescents: An interdisciplinary perspective, (449-476), Boston, MA., Pearson Education Inc.
28. Hoeve, M., Dubas, J.S., Eichelsheim, V.I., Van der Laan, P.H., Smeenk, W., & Gerris, J.R.M. (2009). The relationship between parenting and delinquency: A meta-analysis, *Journal of Abnormal Child Psychology*, Vol. 37, pp. 749-775.
29. INEGI (2014). Social Cohesion Survey for the Prevention of Violence and Crime, ECOPRED 2014, Marco Conceptual, México, INEGI. Consulted in www.inegi.org.mx
30. INEGI (2015). Mexican Intercensal Population Survey, CONTEO 2015. Consulted in https://www.inegi.org.mx/programas/intercensal/2015/
31. INEGI (2016). Encuesta Nacional de Victimización y Percepción sobre Seguridad Pública, ENVIPE 2015. Consulted in www.inegi.org.mx
32. Institute for Economics and Peace (2016). Global Peace Index, Institute for Economics and Peace. Consulted in http://reliefweb.int/report/world/global-peace-index-2016
33. Jiménez Ornelas, R. A. (2005). La delincuencia juvenil: fenómeno de la sociedad actual, *Papeles de Población*, Vol. 11, No. 43, pp. 215-261.
34. Jusidman, C., Camas, F., Carreón, I., & Marín, O. (2016). El crecimiento urbano y las violencias en México, México, CEPAL. Consulted in http://www.cepal.org/es/publicaciones/39899-crecimiento-urbano-violencias-mexico
35. Kakamu, K., W. Polasek, & H. Wago. (2008). Spatial Interaction of Crime Incidents in Japan. *Matemathics and Computers in Simulation*, Vol. 78, pp. 276-282.
36. Kelly, M. (2000). Inequality and Crime. *The Review of Economics and Statistics*, Vol.82, No.4.
37. Kotchick, B. A., & Forehand, R. (2002). Putting parenting in perspective: A discussion of the contextual factors that shape parenting practices, *Journal of Child and Family Studies*, Vol. 11, pp. 255–269.
38. Lagrange, T.C. (1999). The Impact of Neighborhoods, Schools and Malls on the Spatial Distribution of Porperty Damage. *Journal of Research in Crime and Delinquency*, Vol. 36, No.4, pp. 393-422.
39. Lee, L. (2004). Asymptotic distributions of quasi-maximum likelihood estimators for spatial autoregressive models. *Economics*, Vol. 72, No. 6, pp. 1899–1925.
40. Levitt, S. & L. Lochner. (2001). The Determinants of Crime Juvenile. National Bureau of Economic Research.
41. Lozano-Cortés, R., Cabrera-Castellanos, F., & Lozano-Cortés, M. (2012). La delincuencia y su efecto sobre el crecimiento económico. El caso de México, MPRA, Paper 39678, Germany, University Library of Munich. Consulted in https://mpra.ub.uni-muenchen.de/39678/
42. Mancha, G. & Ayala, E. (2018). "Factores de riesgo asociados a la conducta violenta de los jóvenes en México" *Revista Desarrollo y Sociedad*, Vol. 81, pp.171-210.
43. Mancha, G., Aguayo, E. & Ayala, E. (2019). Violencia genera violencia: Efectos de un entorno violento en la conducta de los jóvenes en México. In Figueroa, C. & Grijalva, A. (coord.) Análisis Econométrico del Delito y la Violencia en México. De las Personas a las Instituciones. (pp. 73-98). Guadalajara, México: Editorial UdeG.
44. McLaughlin, E. & Newburn, T. (2010). The sage handbook of criminological theory, London, SAGE Publications.
45. Mendoza, C. (2011). El costo de la inseguridad en México seguimiento 2009: Análisis de la ENSI-7, (Cuadernos del ICESI, num. 10), México, ICESI.
46. Merino, J., Fierro, E. (2016). Violencia en las ciudades de México: Un análisis de tres períodos, México, CEPAL. Consulted in http://www.cepal.org/es/publicaciones/39941-violencia-ciudades-mexico-un-analisis-tres-periodos
47. OMS (2002). Informe mundial sobre la violencia y la salud, Washington, OMS.
48. OMS (2016). Nota descriptiva: Adolescentes: riesgos para la salud y soluciones, Mayo. Consulted in http://www.who.int/mediacentre/factsheets/fs345/es/
49. Puzzanchera, C. & Adams, B. (2011). Juvenile arrests 2009, Washington, DC, Office of Juvenile Justice and Delinquency Prevention.
50. Rendón Cárdenas, Alma Eunice (2015), "Victimización juvenil y prevención", *Revista de Trabajo Social UNAM,* No. 7, pp. 49-59.
51. Snyder, H.N., & Sickmund, M. (2006). Juvenile offenders and victims: 2006 national report, Washington, DC, U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
52. Sood, A. B., & Berkowitz, S.J. (2016). Prevention of Youth Violence. A Public Health Approach, Child and Adolescent Psychiatric Clinics of North America, Vol. 25, Issue 2, pp. 243-256.
53. Soto, H. & Trucco, D. (2015). Inclusión y contextos de violencia, Trucco, D, y Ullmann, H. (ed.), Juventud: realidades y retos para un desarrollo con

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igualdad, Santiago de Chile, CEPAL. Consulted in http://www.cepal.org/es/publicaciones/38978-juventud-realidades-retos-un-desarrollo-igualdad
54. Stern, S. B., & Smith, C.A. (1995). Family processes and delinquency in an ecological context, *Social Service Review*, Vol. 69, pp. 703–731.
55. UNODC, United Nation Office on Drugs and Crime (2011). Homicide Statistics. Consulted in www.unodc.org
56. Vega-Cauich, J., Escobedo Heredia, B., & Zumárraga García, F. (2018), "Marihuana y drogas ilícitas en jóvenes mexicanos: Factores de riesgo y protección asociados a la edad de inicio del consumo", *Revista Iberoamericana de Psicología*, Vol. 11, N. 1, pp.3-10 https://doi.org/10.33881/2027-1786.rip.11103
57. World Bank (2012). La violencia juvenil en México. Reporte de la situación, el marco legal y los programas gubernamentales, Washington, World Bank.
58. Wright, E. M., & Fagan, A. (2013). The cycle of violence in context: exploring the moderating roles of neighborhood disadvantage and cultural norms, *Criminology*, Vol. 51, No. 2, pp. 217-249.

Appendix

Table A1: Description of Variables

Variable	Name of variable	Description
Y_1	Shouting	Percentage of young people shouting at others (in situations of discussion or conflict)
Y_2	Hitting objects	Percentage of young people hitting objects (to calm down)
Y_3	Hitting people	Percentage of young people hitting people (in situations of discussion or conflict)
Y_4	Weapons	Percentage of young people carrying weapons such as knifes or guns (as a method of defense or to be respected)
Y_5	Arrested	Percentage of young people who have been arrested
X	Males	Percentage of young people who are men
	Both parents	Percentage of young people living with both parents
	Study	Percentage of young people studying
	Work	Percentage of young people working full time
	Sports	Percentage of young people who exercise regularly
	Drunk	Percentage of young people who have ever got drunk
	Soft drugs	Percentage of young people who consume or have used soft drugs (marijuana, solvents or hallucinations)
	Hard drugs	Percentage of young people who consume or have used hard drugs (cocaine, amphetamines, or crack)
	Bullied	Percentage of young people who have ever been bullied
	Robbed	Percentage of young people who have ever been robbed
	Violent family	Percentage of young people who report that at home their family push, shout or criticize
	Vicious family	Percentage of young people who report that in their house there is a person who drinks, smokes, drugs or bets a lot
	Bad friends	Percentage of young people who report that a friend drinks alcohol, smokes, takes drugs, commits violent acts, hits other people, carries weapons or has been arrested
	Bad neighbors	Percentage of young people who report that in their neighborhood there is graffiti, people drinking in the streets, or people playing music at a very high volume
	Bad school	Percentage of young people who report that in their school or work there is physical or verbal violence, or there is drug or alcohol use
	Poverty	Percentage of families with income below the CONEVAL´s welfare line
	Education gap	City´s CONEVAL´s educational gap

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	Health	City´s CONEVAL´s lack of access to health services
Z	Social security	City´s CONEVAL´s lack of access to social security
	Services	City´s CONEVAL´s lack of access to basic housing services
	Unemployment	Unemployment rate

Source: ECOPRED 2014 and CONTEO 2015.

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The Development of Knowledge based Economy and its Impact on Competitiveness in Algeria and Some Comparatives Countries

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Abstract- The present study aims to evaluate the position of Algeria in the knowledge economy, which is seen as an inevitability to strengthen competitiveness and achieve economic development. In this context, we try through this study firstly to know the impact of the knowledge economy on competitiveness, applying the Knowledge-Based Economy Indicator (KEI index) according to the World Bank methodology, and the competitiveness indicator according to the World Economic Forum report (GCI index), which will allow us to compare Algeria with indicator countries. The study is realized by using descriptive statistics, correlation, regression and comparative analysis. The study is composed of the following parts: analysis of the competitiveness of Algeria and comparative countries according to the GCI and the KEI, as well as according to the pillars within the KEI, examination of interdependence GCI and KEI and an examination of the impact of the pillar within the KEI on GCI in Algeria and comparative countries. Research results indicate that there is a medium positive correlation between the GCI and KEI. The results of this study provide recommendations to the policy makers in Algeria and comparative countries.

Keywords: knowledge economy, competitiveness, KEI index, GCI index, algeria.

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Amina Zerdoudi [α] & Sabri Mekimah [σ]

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I. Introduction

Global competitiveness has been one of the goals of countries worldwide in the last few years, especially after the financial crisis emphasized the need for new strategies, innovations and dynamics in the economic and business environment.

The theme of knowledge-based economy (KBE) has become increasingly important, being seen as a source of economic growth and competitiveness in all economic sectors. As a consequence of this development, the author provides evidence that scholars and commentators have pleaded in favor of using modern resources that enrich knowledge-based-economies, such as investments in IT&C, high-technology industries, and highly skilled workers.

These factors are perceived as fundamental factors of KBE. In this economy, a new form of organizations and work governs the world of business, demanding the rapid development of skills, solid knowledge and greater responsibility. Contemporary society thus becomes a learning society, adapting to the new, and in this context educational systems must aim at the formation of people able to contribute to the development of their own competencies, to integrate fully in the socio-cultural context.

The term "*knowledge-based economy*" results from a fuller recognition of the role of knowledge and technology in economic growth. The OECD economies are more strongly dependent on the production, distribution and use of knowledge than ever before. Output and employment are expanding fastest in high-technology industries, such as computers, electronics and aerospace. In the past decade, the high-technology share of OECD manufacturing production and exports has more than doubled, to reach 20-25 per cent. Knowledge-intensive service sectors, such as education, communications and information, are growing even faster. Indeed, it is estimated that more than 50 per cent of Gross Domestic Product (GDP) in the major OECD economies is now knowledge-based (OECD, 1996).

Although the remarkable advancement of the developed countries, developing countries, in particularly Algeria progress slowly to absorb knowledge and catch up the developed countries.

According to these facts we have chosen the following theme: "*The impact of the development of knowledge based economy on competitiveness in Algeria»,* this led us to the following main question: *How does the development of the knowledge based economy in Algeria affect the competitiveness of the Algerian economy?.*

The aim of this study is to examine the interdependence between GCI and KEI, as well as, between GCI and pillars within KEI (Economic Incentive & Institutional Regime, Innovation, Education, and ICT). The aim of this research is determining the impact of the pillars within KEI on value of GCI in Algeria and comparatives countries.

In accordance with the purpose of this study, the authors tested the following hypotheses:

Hypothesis 1: Algeria and the comparatives countries are heterogeneous in terms of performance (the score pillars of the KEI index determine the overall level

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achieved by the development of the knowledge economy).

Hypothesis 2: There is a correlation between the GCI and the level of knowledge economy development in Algeria and the comparatives countries.

Hypothesis 3: The pillar within KEI influence morally and positively the GCI in Algeria and the comparatives countries. Which in turn was divided into sub-hypotheses:

First sub-Hypothesis: The pillar of economic incentive and institutional regime affects morally and positively on the GCI in Algeria and comparatives countries.

Second sub-Hypothesis: The pillar of Innovation and Research and Development affects morally and positively on the GCI in Algeria and comparatives countries.

Third sub-Hypothesis: The pillar of Education and Training affects morally and positively on the GCI in Algeria and comparatives countries.

Fourth sub-Hypothesis: The pillar of ICT affects morally and positively on the GCI index in Algeria and comparatives countries.

The study is structured from the following parts: First, we specify the Conceptual Framework of knowledge economy and competitiveness. The research methodology is presented in the second part. Third part of the study refers to the research results and discussions. For the purpose of testing research hypotheses. The results of this study provide recommendations to the policy makers in Algeria and comparatives countries and point out the necessity of improving the performance of all four pillars of the knowledge economy.

II. Conceptual Framework

a) Development of knowledge based economy

Knowledge and competitiveness represent two key factors for enhancing long-term economic development, innovation and sustainability.

In the knowledge economy, intangible assets, such as knowledge and information management, become the new core of competencies. We are in a world where we deal with "cognitive domains", where ideas are worth billions, while products cost less.

According to Hoppe's view, knowledge accumulation is an old and endless evolving learning process that individuals and societies have been contributing to. This knowledge accumulation starts with individuals who make up the building blocks of societies by developing different skills through the accumulation and use of knowledge. Only individuals can know and what they know depends on their perceptions, experience, memory and inference. Knowledge is thus shaped, refined and continually molded by the activities that individuals engage in during their lifetime, boosted by the curiosity and uncertainty that nurture the continuous knowledge creation process via everyday experience and interaction with others (Hoppe, 1997).

Launched towards the end of the 1950s and early 1960s due to researches of Drucker (1959/1994) and Machlup (1962), the concept focused mainly on the emergence of innovative industries as well as on the impact they had on the economic changes. However, the newly coined term proved to be difficult from the point of view of finding a universally accepted definition (Bontis, 2004; Wood, 2003). When referring to a knowledge economy, Druker (1998) depicts it as the appearance of knowledge management and knowledge workers, to the detriment of the manual workers, or another way round, the transition from 'brawn to brain'. Several economic forums and institutions, and not only, manifested their interest in defining KE as well as trends that this economy is characterized by.

The consensus (OECD, 1996; APEC, 2003; Bontis, 2002; Drucker, 1999; Houghton and Sheehan, 2000; Powell and Snellman 2004) seems to concentrate on broad trends and factors that have caused this knowledge economy upsurge:

- Technological advancement particularly in communication, computing, transportation and information exchange;
- Globalization of the world economy which requires countries and firms alike to integrate in the world economy and become more innovative and quicken the process of adaptability;
- The increasing importance of specialized knowledge as a tool in coping with the new trend of globalization;
- The shift in the awareness that knowledge has become a distinct factor of production more than any other traditional factors of production;
- The creation of potential solutions to sustainable economic growth as well as new jobs generation.

The knowledge-based economy is defined by representatives of the Organization for Economic Cooperation and Development (OECD, 1996, p.7) as "economies which are directly based on the production, distribution, and use of knowledge and information". In the knowledge economy, people who possess, use and transfer knowledge are important. That is why people, knowledge, and technology need to be concerted and synergized to facilitate the enhancement of benefit at the level of the organization, local community and/or macroeconomic level. Knowledge based economies are "economies in which the proportion of knowledge-intensive jobs are high, the economic weight of information sectors is a determining factor, and the share of intangible capital is greater than that of tangible capital in the overall stock of real capital" (Foray, 2004, p. ix).

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The UN experts add other features to the previously mentioned definitions: competitiveness and economic growth (Huggins, Izushi, Prokop & Thompson, 2014). Thus, the knowledge-based economy is an economy in which knowledge is created, distributed and used to ensure economic growth and ensure the international competitiveness of a country. At the same time, knowledge has beneficial effects spread across all sectors and economic processes. This definition is completed by the Asia-Pacific Economic Cooperation, which highlights the importance of the knowledge-based economy, arguing that the production, distribution, and use of knowledge are the engine of development and profit-making and the premise of employment in all areas of trade (APEC, 2000). APEC (2000) considers as essential to the knowledge-based economy - the need to be competitive in a world full of both economic and political changes. The knowledge-based economy promotes innovation, initiative, entrepreneurship, and dynamism, being the economy whose one production factor is knowledge (Skrodzka, 2016).

Given the latest trends in the global development of the emerging countries of the market economy, the most important is the focus on building a knowledge-based economy. This means that the main priority should be to develop human skills, focusing on: education, science, and vocational training. Only in this way is it possible to integrate into the rapid processes of globalization.

The knowledge-based economy has transformed the business world by reevaluating the role of innovation as a core process of production, and as an important factor in business success.

The theories defining competitiveness have been derived mostly throughout time from Adam Smith's international trade theories, being adapted as other influence factors arose over time and impacted competitiveness on company, regional or country levels. The OECD, namely "the ability of companies, industries, regions, nations or supranational regions to generate, while being and remaining exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis", provided one general definition of competitiveness. In this type of definition, competitiveness is described mainly with regard to financial outcomes.

b) Measuring the international competitiveness

There are different models to analyze competitiveness within the countries. The first model is the one proposed by the German Institute for Development, which is known as "Systemic Competitiveness" and is founded in four levels: meta-economic, macroeconomic, miso-economic, and Microeconomic. In this model, higher education and all the government levels are part of the miso-economic level.

The Institute for Management Development (IMD) proposes a second model. This institute sponsors the World Competitiveness Center that presents an annual ranking of competitiveness, and in 2015 ranked sixty-one countries. Competitiveness is analyzed considering four primary factors: Economic performance, Government efficiency, Business efficiency, and Infrastructure. Each of those factors is divided into five sub-factors. The twenty sub-factors are assessed considering 300 criteria. Education is the fifth sub-factor within the factor of infrastructure, which is evaluated using 18 criteria. Considering Porter's theories and his Single Diamond (SD) model, in 2013 Cho and Moon developed other models with a higher number of variables, such as the Generalized Double Diamond (SD), the Nine Factors Model (NFM) and the Dual Double Diamond (DDD).

Introducing an international variable in the existing domestic model SD creates the GDD model. The NFM is formed by introducing a diamond of human factors to the existing diamond of physical factors. The integration of these two extensions and the incorporation of international human factors into the single framework produce the DDD model (Cho and Moon, 2013, p.172).

Cho and Moon designed four rankings considering sixty-six countries; the first one belongs to the simple model of Porter SD, the second one to the NFM, the third one to the GDD and the last to the DDD. Comparing the last three rankings to the SD, we found out that by introducing the variable of human capital, countries moved 3.27 positions on average. Likewise when the variable 'international' is considered (3.4 positions). Although, the greater variation in the positions happened when we introduced the variable 'international human capital' (5 positions on average). This means that the introduction of this variable in the DDD ranking, completely modified the original SD model by Porter, which agrees with Lane's opinion (2012) who states that Porter did not consider the institutions that form human capital in his analysis of competitiveness.

The WEF defines competitiveness "as the set of institutions, policies and factors that determine the level of productivity of an economy, which in turn sets the level of prosperity that the country can earn." (Sala-i-Martin, et. al, 2015, p. 4)

WEF assess competitiveness within the countries through the Global Competitiveness Index (GCI), including 144 indicators grouped in twelve pillars. The interest of this work is focused on pillar five of higher education and training.

The GCI includes statistical data from internationally recognized agencies: notably the

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International Monetary Fund (IMF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the World Health Organization (WHO). It also includes data from the World Economic Forum's Annual Executive Opinion Survey to capture concepts that require a more qualitative assessment (Sala-i-Martin, et al, 2015, p. 5). One hundred sixty partner institutes from all over the world participate in the administration of the surveys and interviewed business executives.

In 2015, WEF ranked the competitiveness of 140 countries. They are ranked from 1 to 140 with 1 being the highest rank.

Moreover, there has been a considerable increase in studies regarding economics of education, economics of innovation and in general economics of knowledge and information. That is because these variables are strategic elements for promoting competitiveness in the countries.

The concept of competitiveness of the countries was introduced by Porter in 1990, with his book The competitive advantage of nations where he states that economic competitiveness of the nations in the 21st century would be created and not inherited, and he was right about it, because as Lane (2012) properly stated the pillars of competitiveness had been significantly transformed. Lane says that, twenty years ago the debate regarding the role that universities had in the increasing of competitiveness was minimum.

Porter focused his analysis almost exclusively on the firms and their role in the creation of factors that lead the economy and directed the activities within the universities, which were looking to satisfy the necessities of the industry. Comparative studies in higher education emerged in this context.

Globalization processes combined with the global development model that is sustained by knowledge economy has resulted in the phenomenon of the pursuing global competitiveness, influencing policies and higher education decisions and actions, which has also entered in a process of competitiveness in the global context. This is confirmed by Portnoi, Bagley and Rust (2010), who points out that competition among universities takes different forms, it can occur in the institutional, local, regional, national and global levels.

III. Research Methodology

For the empirical analysis, we selected one dependent variable, the KEI and independent variable the GCI, Information base for this research consists of the information contained in The Global Competitiveness Report 2012-2013 and the data of the World Bank – Knowledge Economy Index (KEI) for 2012.

The methodology for measuring national and global competitiveness of the World Economic Forum (WEF) systematizes the key factors into 12 groups of factors in order to quantify the level of competitiveness of the national economy and rankings.

These so-called competitiveness pillars are: basic factors (institutions, infrastructure, macroeconomic stability, health and primary education), the efficiency factors (higher education, goods market efficiency, labor markets efficiency, financial market development, technological competence/capacity, market size) and innovation factors (business/business process sophistication, innovation). Composite the Global Competitiveness Index (GCI) is a result of measuring many factors and variables.

The growing need to measure the KE forced International Institutions to develop instruments and programs for measuring it in every country/region and for comparing countries at the international level (Debnath, 2015). In this respect, several KE Assessment Methodologies were developed, the most important and highly used is the one created and applied by the World Bank. Currently, this assessment is made up of 109 structural and qualitative variables, differentiated for 146 countries, the final goal is the measurement of their performance in direct accordance with the four KE pillars (World Bank, 2012):

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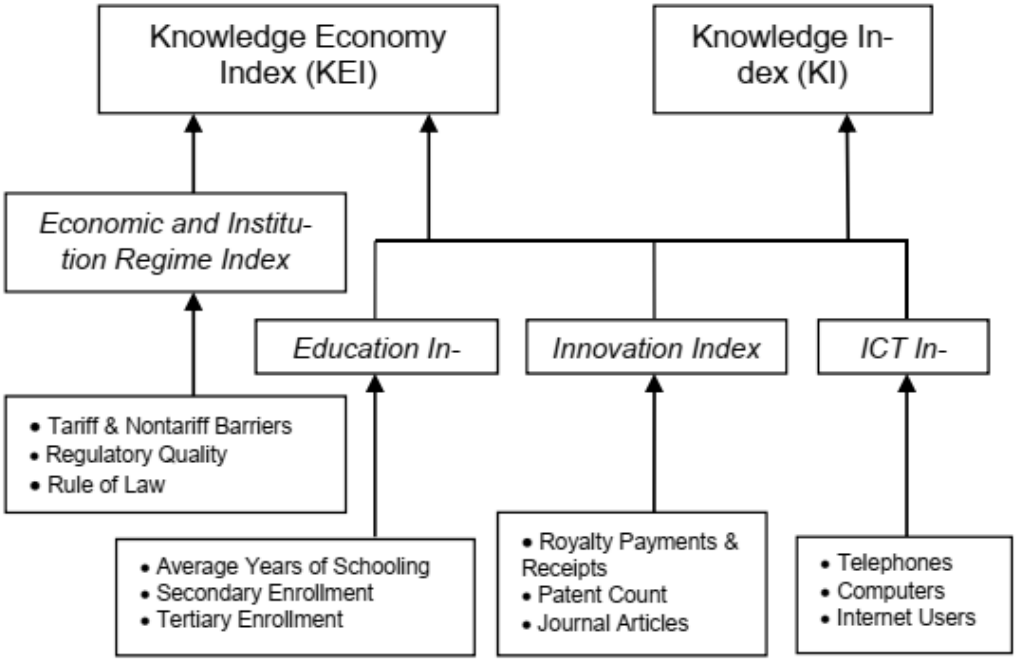

Source: The World Bank (WB), Knowledge Economy Index (KEI) 2012 Rankings, http://siteresources.worldbank.org/INTUNIKAM/Resources/2012.pdf

Figure 1: KEI and KI indexes

The results from the analysis of the four pillars are grouped in two indexes: Knowledge Index and the Knowledge Economy Index, according to Figure 1.

The indices have values ranging from 0 to 10, the highest rank representing the highest KE as well (Chen & Dahlman, 2005; Sundać & Krmpotić, 2011).

IV. Research Results and Discussions

In the purpose of realizing the given task and testing hypotheses, the paper is structured in the following sections:

- Analysis of Algeria's competitiveness according to GCI and KEI;
- Analysis of pillar within KEI in Algeria;
- Examining the correlation between GCI and KEI in Algeria;
- Analysis of the influence of pillar within KEI on GCI in Algeria.

a) Analysis Algeria's competitiveness according to GCI and KEI

Analysis Algeria's competitiveness is based on data about rank and score of GCI, presented by the World Economic Forum and data about rank and score of KEI, presented by the World Bank. Table 1 shows the position of Algeria and some Arab and emerging countries according to rank and score of GCI for 2012, as well as the average score.

Table 1: Rank and score of GCI for Algeria and some Arab and emerging countries (2012).

GCI index		
Countries	Score	Rank/144
Algeria	3.72	110
Morocco	4.15	70
Egypt	3.73	107
Saudi Arabia	5.19	18
Jordan	4.23	64
Bahrain	4.63	35
Brazil	4.40	48
India	4.32	59
China	4.83	29
South Africa	4.37	52
Average	4.36	-

Source: The Word Economic Forum (WEF): The Global Competitiveness Reports 2012 - 2013, http://www3.weforum.org/docs/WEF_GlobalCompetitivenessReport_2012-13.pdf

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Based on the table's data, we find the highest score of the GCI index for the year 2012 recorded to Saudi Arabia with a score of 5.19, where it represents the highest score among the Arab countries, followed by China as an emerging country with a score of 4.83.

Also, based on the score of the GCI indicators, five countries managed to exceed the global average (4.36) which is Saudi Arabia, China, Bahrain, Brazil and South Africa, while the rest of the countries selected for the study were not able to exceed the global average, and Algeria came in the last ranking with a score of 3.72.

As for Algeria is ranking among the 144 countries mentioned in the report of the Global Competitiveness Index for the year 2012, it ranked 110 late.

Algeria has made significant strides in the past five years, which enabled it to score better results in the recent report of the World Economic Forum on the Global Competitiveness Index, with a score of 4.07 and ranked 87th out of 138 countries mentioned in the report.

Table 2 shows the position of Algeria and some Arab and emerging countries according to rank and score of KEI. The World Bank analyzed and ranked total 144 countries in 2012.

Table 2: Rank and score of KEI for Algeria and some Arab and emerging countries (2012).

KEI index		
Countries	Score	Rank/144
Algeria	3.79	96
Morocco	3.61	102
Egypt	3.78	97
Saudi Arabia	5.96	50
Jordan	4.95	75
Bahrain	6.90	43
Brazil	5.58	60
India	3.06	110
China	4.37	84
South Africa	5.21	67
Average	5.12	-

Source: The World Bank (WB), Knowledge Economy Index (KEI) 2012 Rankings, http://siteresources.worldbank.org/INTUNIKAM/Resources/2012.pdf

As the report of the World Bank contains a total of 144 countries in 2012, Bahrain obtained the highest score for the KEI index for the year 2012 with a score of 6.90 and ranked 43 globally (out of 144 countries), followed by Saudi Arabia with a score of 5.96 (ranked 50), for Algeria it got a score of 3.79 (Ranked 96). and therefore it is lower than the global average (5.12) for the total countries selected for the study. while the worst results were returned to Morocco with a score of 3.61 (ranked 102) and India with an index score of 3.06 (ranked 110). Countries with scores below the world average: China, Algeria, Egypt, Morocco and India.

Table 3 presents the results of descriptive statistics according to score of GCI and KEI in Algeria and some Arab and emerging countries in 2012.

Table 3: Results of descriptive statistics for Algeria and some Arab and emerging countries according to score of GCI and KEI in 2012.

Indicators	N	Min	Max	Mean	Std Deviation	Variation Coefficient
GCI	10	3.72	5.19	4.36	0.45	10.41
KEI	10	3.06	6.90	4.72	1.21	23.27

Source: Author calculation

From the previous table, the lowest score for the GCI index was 3.72, the highest score at 5.19, and the average scores were 4.36 with a standard deviation of 0.45, for the KEI index the lowest score was 3.06 and the highest score was 6.90, while the average scores were estimated at 4.72 and a deviation Standard 1.21, and therefore there is variation and heterogeneity between countries, and this is confirmed by the contrast rate for both the GCI index and the KEI index.

b) Analysis of the pillar within KEI in Algeria and comparative countries.

In order to assess the achievements of Algeria and comparative countries in each pillar of the knowledge economy, the scores of pillars within KEI for 2012 are presented in Table 4. In order to understand the relative positions of countries according to each pillar, their average value is given in the following table.

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Table 4: Score and rank of pillars within KEI for Algeria and comparative countries (2012).

Countries	Economic Incentive And Institutional Regime		Innovation		Education		ICT	
	SCORE*	Rank**	SCORE	Rank	SCORE	Rank	SCORE	Rank
Algeria	2.33	10	3.54	10	5.27	5	4.04	5
Morocco	4.66	5	3.67	9	2.07	10	4.02	6
Egypt	4.50	6	4.11	7	3.37	8	3.12	9
Saudi Arabia	5.68	2	4.14	6	5.65	2	8.37	2
Jordan	5.65	3	4.05	8	5.55	4	4.54	4
Bahrain	6.69	1	4.61	4	6.78	1	9.54	1
Brazil	4.17	7	6.31	2	5.61	3	6.24	3
India	3.57	9	4.50	5	2.26	9	1.90	10
China	3.79	8	5.99	3	3.93	7	3.79	7
South Africa	5.49	4	6.89	1	4.87	6	3.58	8
Average	4.75	-	4.78	-	4.53	-	4.91	-

Source: The World Bank (WB), http://info.worldbank.org/etools/kam2/KAM_page5.asp

Upon observing the results of the countries, we found that the information and communication technology (ICT) column recorded the highest rate with a score of 4.91, occupying the pillar of innovation and research and development with the second position at 4.78, followed by the pillar of economic incentives and the institutional regime at 4.75, and finally the pillar of education and training at 4.53.

Analysis of the results of Algeria and comparative countries in each pillar:

With regard to the pillar of the economic incentive and institutional regime , we noted that most of the selected countries have rates below the global average for the pillar of the economic incentive and institutional regime incentives (Morocco, Egypt, Brazil, India, China), including Algeria. While the highest rate was recorded in Bahrain with a score of 6.69 Also, Saudi Arabia, Jordan, and South Africa were higher than the global average.

As for the pillar of innovation and research and development, the highest rate was recorded in South Africa with a score of 6.89, followed by Brazil and China, while for the rest of the countries it was not able to exceed the global average (4.78), and the lowest level was recorded in Algeria with a score of 3.54.

As for the results of the pillar education and training, Algeria managed to achieve good results 5.27, registering a higher rate than the global average (4.53), as well as returning the highest score to Bahrain by 6.78, and Saudi Arabia, Jordan, Brazil and South Africa achieved a greater rate than the global average, Morocco's lowest rate was 2.07.

As for the results of the pillar of ICT, Algeria's results were below average of 4.04 and ranked 5th among the selected sample, and this did not prevent Algeria from achieving better results than those recorded in Morocco, Egypt, India, China and South Africa. The best results were recorded in Bahrain at a rate of 9.54, followed by Saudi Arabia, Brazil and Jordan.

From the foregoing and the results achieved in Algeria and the rest of the countries in the main pillars of the KEI index, it is clear that the scores achieved by Algeria are not homogeneous, which confirms the validity of the first sub-hypothesis.

c) *Examining the correlation between GCI and KEI in Algeria and comparative countries.*

In order to examine the interdependence between competitiveness (measured by GCI) and knowledge economy development (measured by KEI) in Algeria and comparative countries.

The method: Person Correlation

Table 5: Correlation coefficient between score of GCI and score of KEI in Algeria and comparative countries (2012).

Correlation			
GCI	Pearson correlation	1	,597
	Sig.		,069
	N	10	10
KEI	Pearson correlation	,597	1
	Sig.	,069	
	N	10	10

Source: Author calculation based on SPSS.

Determined value of the correlation coefficient between GCI and KEI of 0.59 indicates a medium positive correlation. In this way, it can be concluded that the competitiveness of Algeria and comparative countries is based on knowledge, as a factor that in modern economy offers significant opportunities for competitiveness enhancement. Accordingly, these

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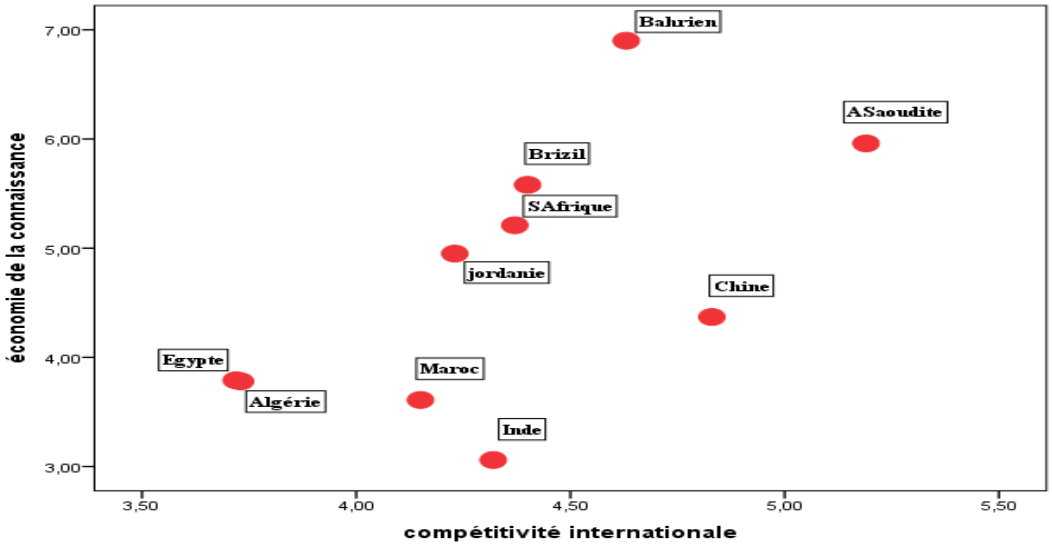
countries still have many stages to integrate into the knowledge economy.



Source: Author calculation based on SPSS.

Figure 2: The correlation coefficient (medium positive correlation) between GCI and KEI in Algeria and comparative countries.

Therefore, it can be confirmed the second hypothesis that there is a correlation between the international competitiveness index GCI and the level of development of the knowledge economy in Algeria and comparative countries.

In order to study the correlation between GCI and pillars within KEI we applied "a correlation analysis", the table 6 analyze the correlation between GCI and pillars within KEI in Algeria and comparative countries (2012).

Table 6: Correlation coefficient between GCI and KEI with pillar within KEI in Algeria and comparative countries (2012).

	GCI	KEI	REG	EDU	INNO	ICT
GCI	1	,597	,479	,338	,318	,577
SIG		,069	,161	,339	,371	,081
N	10	10	10	10	10	10
KEI	,597	1	,748*	,317	,863**	,902**
SIG	,069		,013	,372	,001	,000
N	10	10	10	10	10	10
REG	,479	,748*	1	,114	,444	,633*
SIG	,161	,013		,755	,199	,050
N	10	10	10	10	10	10
EDU	,318	,863**	,444	,182	1	,767**
SIG	,371	,001	,199	,615		,010
N	10	10	10	10	10	10
INNO	,338	,317	,114	1	,182	-,029
SIG	,339	,372	,755		,615	,936
N	10	10	10	10	10	10
ICT	,577	,902**	,633*	-,029	,767**	1
SIG	,081	,000	,050	,936	,010	
N	10	10	10	10	10	10

Source: Author calculation based on SPSS.

To analyze the correlation between the GCI index and the pillars within KEI index we found that there was a weak direct correlation with a score of (0.48) between the pillar of economic incentive and institutional regime and the GCI index. Therefore Algeria and the comparative countries do not rely on the pillar of economic incentive and institutional regime significantly to enhance their competitiveness.

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The correlation between the GCI index and the pillar of innovation and research and development was also weakly correlated with a score of (0.34). Therefore, Algeria and the comparative countries also do not rely on the pillar of innovation and research and development with a large degree to enhance competitiveness.

The correlation between the GCI index and the pillar of education and training was also weakly correlated with a score of (0.32). Therefore, Algeria and the comparative countries also do not rely heavily on the pillar of education and training to enhance competitiveness.

While the correlation between the GCI index and the pillar of ICT it was Intermediate correlation of (0.57), accordingly, it can be said that Algeria and the comparative countries rely moderately on the pillar of ICT to improve their competitiveness.

d) Analysis of influence of pillars within KEI on GCI in Algeria and comparative countries.

To study the validity of the third hypothesis "Algeria's integration into the knowledge economy has a major impact on competitiveness", we will study the effect of each pillars within KEI.

i. *The effect of the pillar of economic incentive and institutional regime on the GCI*

First Sub-Hypothesis: The pillar of economic incentive and institutional regime effect significantly and positively on the GCI index in Algeria and comparative countries.

To identify the influence between the independent variable (GCI) and the dependent variable (economic incentives and institutional systems), and to test the model's ability to interpret, we used both of the correlation coefficient (R), the determining coefficient (R^2) and the modified determining coefficient (R^{-2}) As shown in Table 7.

Table 7: Regression form (sub-hypothesis 1)

R	R^2	R^{-2}	Sig
0.479	0.230	0.133	0.42248

Source: Author calculation based on SPSS.

The above table showed that the correlation coefficient is estimated at (0.48), which indicates the existence of a weak direct correlation between the independent variable and the dependent variable, as the value of the coefficient of determination (R2) (0.23), and this means that the independent variable explains 23% of the variance in The dependent variable. The remaining percentage is due to other factors not studied, and the hypothesis will be tested as well using the statistic T in the analysis as shown in the table.

Table 8: The regression coefficient according to T statistic (sub-hypothesis 1).

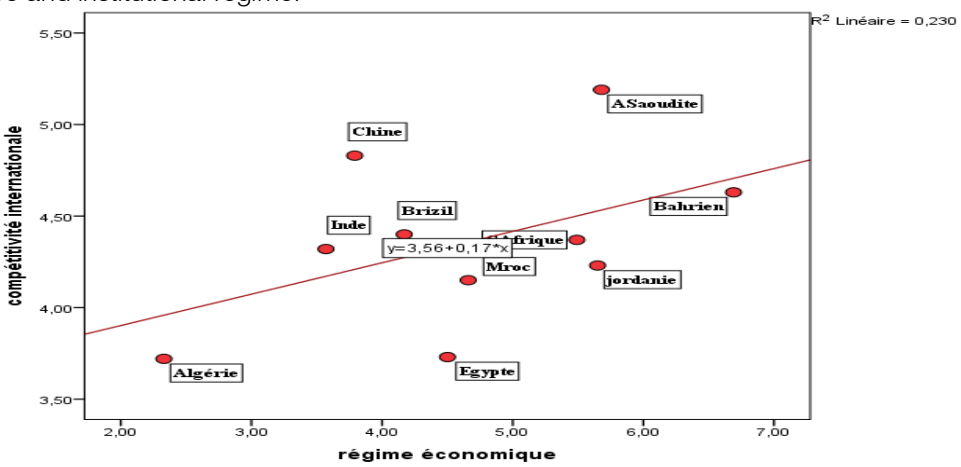
	B	Standard error	BETA	T	SIG
a	3.559	0.534		6.668	0.000
	0.171	0.111	0.479	1.544	0.161

Source: Author calculation based on SPSS.

According to the previous table, the simple linear regression equation can be extracted as follows:

GCI index = 3.56 + 0.17 (the pillar of economic incentive and institutional regime) + remaining

Figure 3 shows the simple linear regression equation model for the competitiveness index and the pillar of economic incentive and institutional regime.



Source: Author calculation based on SPSS.

Figure 3: The simple linear regression equation model for the competitiveness index and the pillar of economic incentive and institutional regime.

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From the above, it can be concluded that:

The value of T was 1.54 and the corresponding level of significance was 0.16, which is statistically insignificant, which means that there is no significant and positive effect of the pillar of economic incentive and institutional regime on the competitiveness index in Algeria and the comparative countries, at the level of significance of 5%. In fact, the hypothesis is refused: the pillar of economic incentive and institutional regime affects morally and positively on the GCI in Algeria and the comparative countries.

ii. *The effect of the pillar of innovation, research and development on the GCI*

Second Sub-Hypothesis: The pillar of innovation, research and development effect significantly and positively on the GCI index in Algeria and comparative countries.

To identify the influence between the independent variable (GCI) and the dependent variable (innovation, research and development), and to test the model's ability to interpret, we used both of the correlation coefficient (R), the determining coefficient (R^2) and the modified determining coefficient (R^{-2}) As shown in Table 9.

Table 9: Regression form (sub-hypothesis 2)

R	R^2	R^{-2}	Sig
0.338	0.114	0.004	0.45299

Source: Author calculation based on SPSS.

The above table showed that the correlation coefficient is estimated at (0.34), which indicates the existence of a weak direct correlation between the independent variable and the dependent variable, as the value of the coefficient of determination (R^2) (0.11), and this means that the independent variable explains 11% of the variance in The dependent variable. The remaining percentage is due to other factors not studied, and the hypothesis will be tested as well using the statistic T in the analysis as shown in the table.

Table 10: The regression coefficient according to T statistic (sub-hypothesis 2).

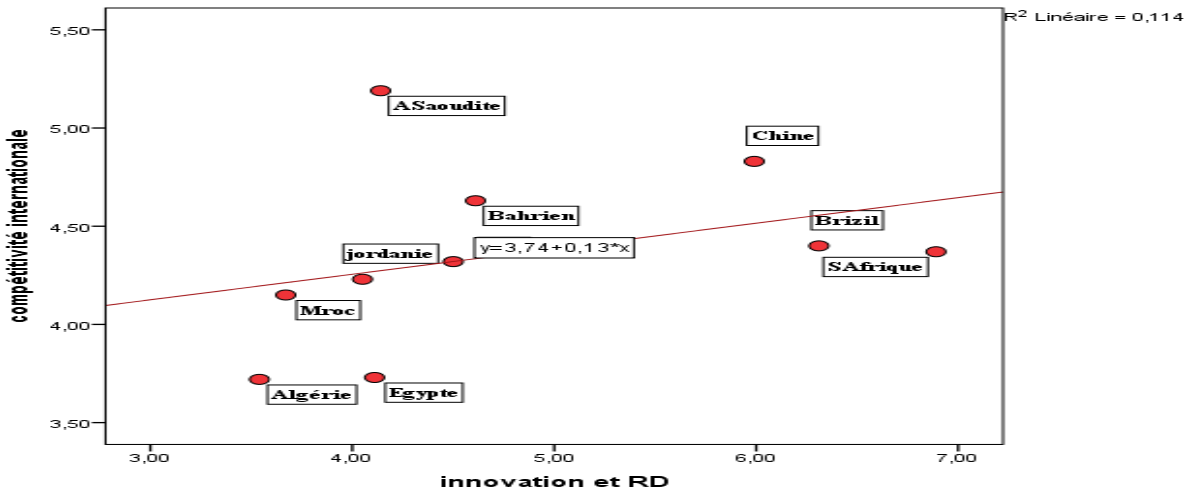
	B	Standard error	BETA	T	SIG
a	3.735	0.628		5.943	0.000
	0.130	0.128	0.338	1.016	0.339

Source: Author calculation based on SPSS.

According to the previous table, the simple linear regression equation can be extracted as follows:

GCI index = 3.56 + 0.17 (the pillar of innovation, research and development) + remaining

Figure 4 shows the simple linear regression equation model for the competitivité index and the pillar of innovation, research and development.



Source: Author calculation based on SPSS.

Figure 4: The simple linear regression equation model for the competitiveness index and the pillar of innovation, research and development.

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From the above, it can be concluded that:

The value of T was 1.02 and the corresponding level of significance was 0.34, which is statistically insignificant, which means that there is no significant and positive effect of the pillar of innovation and research and development on the competitiveness index in Algeria and the comparative countries, at the level of significance of 5%. In fact, the hypothesis is refused: the pillar of innovation and research and development regime affects morally and positively on the GCI in Algeria and the comparative countries.

iii. *The effect of the pillar of education and training on the GCI*

Third Sub-Hypothesis: The pillar of education and training effect significantly and positively on the GCI index in Algeria and comparative countries.

To identify the influence between the independent variable (GCI) and the dependent variable (education and formation), and to test the model's ability to interpret, we used both of the correlation coefficient (R), the determining coefficient (R^2) and the modified determining coefficient (R^{-2}) as shown in Table 11.

Table 11: Regression form (sub- hypothesis 3)

R	R^2	R^{-2}	Sig
0.318	0.101	-0.011	0.45637

Source: Author calculation based on SPSS.

The above table showed that the correlation coefficient is estimated at (0.32), which indicates the existence of a weak direct correlation between the independent variable and the dependent variable, as the value of the coefficient of determination (R^2) (0.10), and this means that the independent variable explains 10% of the variance in The dependent variable. The remaining percentage is due to other factors not studied, and the hypothesis will be tested as well using the statistic T in the analysis as shown in the table.

Table 12: The regression coefficient according to T statistic (sub-hypothesis 3).

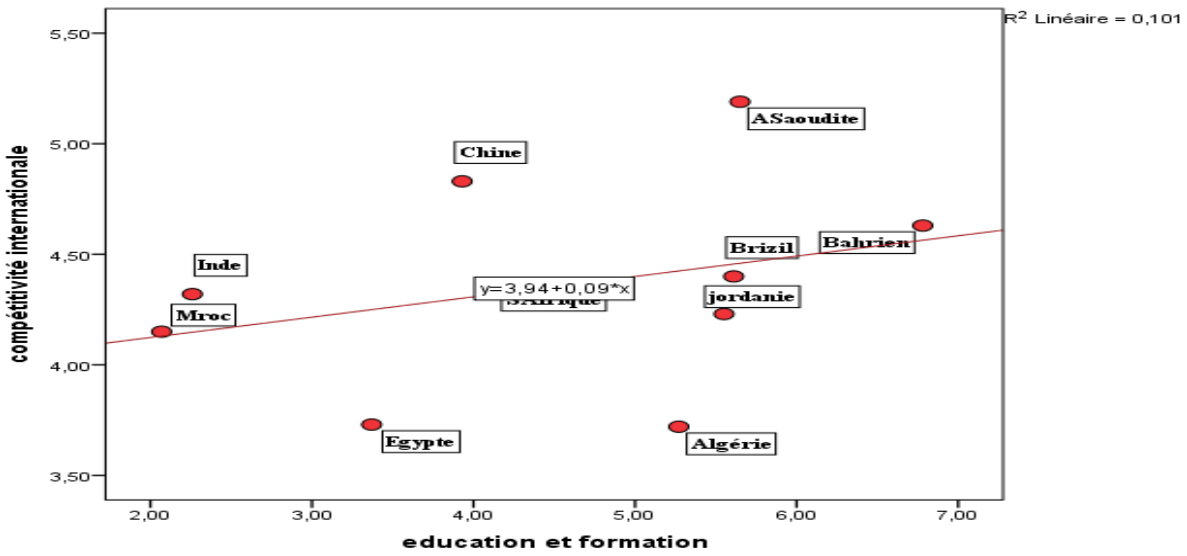
	B	Standard error	BETA	T	SIG
a	3.939	0.463		8.501	0.000
	0.092	0.097	0.318	0.948	0.371

Source: Author calculation based on SPSS.

According to the previous table, the simple linear regression equation can be extracted as follows:

GCI index = 3.56 + 0.17 (The pillar of education and training) + remaining

Figure 5 shows the simple linear regression equation model for the competitivenes index and the pillar of education and training.



Source: Author calculation based on SPSS.

Figure 5: The simple linear regression equation model for the competitiveness index and the pillar of education and training.

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From the above, it can be concluded that:

The value of T was 0.95 and the corresponding level of significance was 0.37, which is statistically insignificant, which means that there is no significant and positive effect of the pillar of innovation and research and development on the competitiveness index in Algeria and the comparative countries, at the level of significance of 5%. In fact, the hypothesis is refused: the pillar of education and training affects morally and positively on the GCI in Algeria and the comparative countries.

iv. *The effect of the pillar of ICT on the GCI*

Fourth Sub-Hypothesis: The pillar of ICT effect significantly and positively on the GCI index in Algeria and comparative countries.

To identify the influence between the independent variable (GCI) and the dependent variable (ICT), and to test the model's ability to interpret, we used both of the correlation coefficient (R), the determining coefficient (R^2) and the modified determining coefficient (R^{-2}) as shown in Table 13.

Table 13: Regression form (sub-hypothesis 4)

R	R^2	R^{-2}	Sig
0.577	0.333	-0.250	0.39303

Source: Author calculation based on SPSS.

The above table showed that the correlation coefficient is estimated at (0.58), which indicates the existence of a weak direct correlation between the independent variable and the dependent variable, as the value of the coefficient of determination (R^2) (0.33), and this means that the independent variable explains 33% of the variance in The dependent variable. The remaining percentage is due to other factors not studied, and the hypothesis will be tested as well using the statistic T in the analysis as shown in the table.

Table 14: The regression coefficient according to T statistic (sub-hypothesis 4).

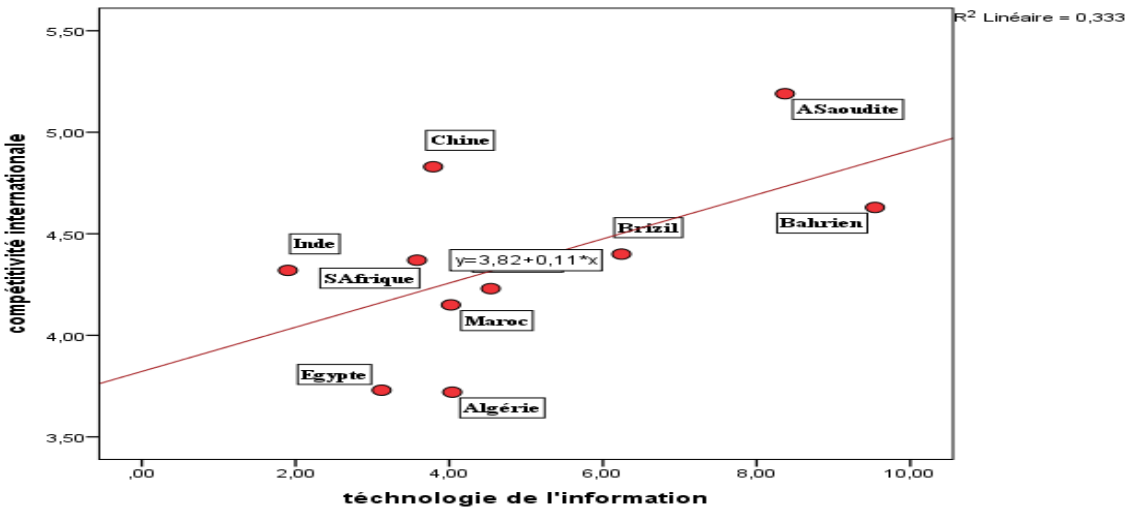
	B	Standard error	BETA	T	SIG
a	3.822	0.295		12.961	0.000
	0.109	0.054	0.577	2.000	0.081

Source: Author calculation based on SPSS.

According to the previous table, the simple linear regression equation can be extracted as follows:

GCI index = 3.56 + 0.17 (The pillar of ICT) + remaining

Figure 6 shows the simple linear regression equation model for the competitiveness index and the pillar of ICT.



Source: Author calculation based on SPSS.

Figure 6: The simple linear regression equation model for the competitiveness index and the pillar of ICT.

From the above, it can be concluded that:

The value of T was 2.00 and the corresponding level of significance was 0.08, which is statistically insignificant, which means that there is no significant and positive effect of the pillar of ICT on the competitiveness index in Algeria and the comparative countries, at the level of significance of 5%. In fact, the hypothesis is refused: the pillar of ICT affects morally and positively on the GCI in Algeria and the comparative countries.

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V. Conclusion

Knowledge has become a decisive factor in competitiveness, growth and wealth. In other words, a real investment capital as important as equipment, machinery. Among the parameters of this economy, the intensification of the use of information and communication technologies (ICT), the central place occupied more and more by innovation in competitiveness, new training profiles and the new capacities which the education system must develop and a favorable and incentive institutional framework.

In this study, we have examined the possibilities of moving from the Algerian economic model to an economic model based on the knowledge economy. We consider that since the end of the 1990s, there has been a willingness on the part of public authorities in favor of scientific and technological research. If the current Algerian economic system is still far from the model based on the knowledge economy, we defend the idea that a window is opening allowing us to move in this direction. The increase in the general level of education and the recent development of research activities, supported by significant means, are all factors in favor of Algeria to reach the technological frontiers.

The result:

- The most important elements of the knowledge economy are the existence of a solid ICT infrastructure, the strengthening of the organizational context for knowledge production.
- Education is the fundamental basis of knowledge and skills, and the most important factor in the accumulation of human capital.
- The choice of innovation as a tool for competitiveness, investment in R&D, are the essential foundations for the construction of a knowledge-based economy.
- Algeria suffers from numerous imperfections, which prevent it from moving towards the knowledge economy.
- The Knowledge Economy Index (KEI) shows that competitiveness in Algeria and the comparatives countries depends moderately on the development of the knowledge economy, so there is an intermediate correlation between the GCI index and the level of development of the knowledge economy in Algerian and the comparatives countries.
- Algeria and the comparatives countries do not rely on the pillar of economic incentive and institutional regime, on the pillar of innovation, research and development and on the pillar of education and training to improve their competitiveness. (Weak bond)
- Algeria and the comparatives countries rely moderately on the ICT pillar to improve their competitiveness.
- There is no significant and positive effect (the significant level of 5%) of the pillar within the KEI index on the GCI index in Algerian and the comparatives countries.

In conclusion, the development of knowledge economy will not be possible without strengthening productive investments in the field of scientific research and in human resources to develop human skills, which is the essence of innovation and competitiveness.

References Références Referencias

1. APEC (2000). Towards knowledge-based economies in APEC. Singapore: APEC Secretariat.
2. Bontis, N. (2002), 'The Rising Star of the Chief Knowledge Officer', Ivey Business Journal, vol. 66, no. 4, pp. 5-20.
3. Chen, D.H. and Dahlman, C.J. (2005). The knowledge economy. The KAM methodology and World Bank operations. World Bank Institute Working Paper No. 37256. Washington DC.
4. Cho, D. S. & Moon, H. Ch. (2013). *From Adam Smith to Michael Porter: Evolution of competitiveness theory.* New Jersey: World Scientific.
5. Debnath, S.C. (2015). Creating the knowledge-based economy in Kingdom of Saudi Arabia to solve the current unemployment crisis. The Ritsumeikan Business Review, 28(2), 249-268
6. Drucker, P. (1998). From capitalism to knowledge society. In D. Neef (Ed.), *The knowledge economy* (pp.15-34). Boston: Butterworth-Heinemann.
7. Drucker, P. (1999), 'Knowledge-worker Productivity: The Biggest Challenge', *California Management Review*, vol. 42, no. 2, pp.79-94.
8. Foray, D. (2004). The Economics of Knowledge, Cambridge: MIT Press.
9. Hoppe, H. (1997), 'On Certainty and Uncertainty Or: How Rational Can Our Expectation Be?', Review of Austrian Economics, vol. 10, no. 1, pp. 49-78.
10. Houghton, J. and Sheehan, P. (2000), 'A Primer on the Knowledge Economy', Working Paper no.18, Center for Strategic Economic Studies (CSES), Victoria University.
11. Huggins, R., Izushi, H., Prokop, D., and Thompson, P. (2014). Regional competitiveness, economic growth and stages of development. Zbornik Radova Ekonomskog Fakulteta u Rijeci, 32(2), 255-283.
12. Machlup, F. (1962). The production and distribution of knowledge in the United States. Princeton, NJ: Princeton Univ. Press. (Bontis, 2004; Wood, 2003).
13. OECD. (1996). The Knowledge-Based Economy. Paris: OECD. Retrieved from http://www.oecd.org/science/sci-tech/1913021.pdf (01.05.2013)
14. Porter, M. (1990). *The competitive advantage of nations.* New York, NY: The Free Press.

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15. Powell, W.W.; Snellman, K. The Knowledge economy. Annu. Rev. Sociol. 2004, 30, 199–220.
16. Sala-i-Martin, Xavier; Crotti, Roberto; Battista Attilio; Drzeniek Ha-nouz, Margareta; Galvan, Caroline; Geiger Thierry, and Marti Gaëlle (2015). Reaching beyond the new normal: Findings from the Global Competitiveness Index 2015-2016. In Klaus Schwab ed. *The Global Competitiveness Report 2015-2016.* Geneva: World Economic Forum, pp. 3-42.
17. Skrodzka, I. (2016). Knowledge-based economy in the European Union – Crosscountry analysis. Statistics in Transition New Series, 17(2), 281-294.
18. Sundać, D., and Krmpotić, I.F. (2011). Knowledge economy factors and the development of knowledge-based economy. Croatia Economic Survey, 13(1), 105-141
19. The Word Economic Forum. (2013). the Global Competitiveness Reports 2012 – 2013. Retrieved from: http://www3.weforum.org/docs/WEF_Global CompetitivenessReport_2012-13.pdf
20. World Bank Institute (2002), 'Knowledge Assessment Methodology and Scorecards', Knowledge for Development Program, World Bank, Washington, DC, at: http://vle.worldbank.org/gdln/ Programs/kam2002/methodology.htm

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Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Social Science Research Paper

Techniques for writing a good quality homan social science research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of homan social science then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.
Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

19. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

20. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

21. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

22. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.



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Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.



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Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules

Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

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Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

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Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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