Googlekonomia

Mario Arturo Ruiz Estrada[1] and Minsso LEE[2]

[1]University of Malaya
[2]Affiliation not available

January 23, 2020

Abstract

The Googlekonomia is an alternative economic research technique that focuses on searching the best and easy access to a large number of economic database and documents from different sources on the internet. The main objective of Googlekonomia is the technical evaluation of trustworthy economic database and documents from different websites and search engines. Subsequently, the Googlekonomia is able to monitoring, evaluating, and classifying a large number of economic database and documents to study and solve possible economic problems. Finally, the Googlekonomia evaluates a large number of possible economic database and documents access in the internet sources and search engines based on the uses of artificial intelligence and a real-time multi-dimensional graphical modeling approach together.

GOOGLEKONOMIA

Keywords:
Google, Economics Information, Econographicology

JEL code
B40

Author
Dr. Mario Arturo Ruiz Estrada
Social Security Research Centre (SSRC),
Centre for Poverty and Development Studies (CPDS),
Faculty of Economics and Administration (FEA),
University of Malaya (UM),
Kuala Lumpur 50603, Malaysia
[E-mail] marioruiz@um.edu.my

Abstract

The Googlekonomia is an alternative economic research technique that focuses on searching the best and easy access to a large number of economic database and documents from different sources on the internet. The main objective of Googlekonomia is the technical evaluation of trustworthy economic database and documents from different websites and search engines. Subsequently, the Googlekonomia is able to monitoring, evaluating, and classifying a large number of economic database and documents to study and solve possible economic problems. Finally, the Googlekonomia evaluates a large number of possible economic database and documents access in the internet sources and search engines based on the uses of artificial intelligence and a real-time multi-dimensional graphical modeling approach together.

1. Introduction

"Googlekonomia" can be defined as "an economic research technique in searching, finding, and verifying different economic research sources access to obtain a large list of different economic database or documents (scientific magazines, technical reports, working papers, monographs, journals, newspapers, encyclopaedias, or books) through the uses of artificial intelligence and a real time multidimensional graphical visualization modeling that is supported by the use of different internet searching engines as well as a large number of websites, to analytically evaluate truthfulness and reliability of different economic database and documents access around the world, anywhere and anytime."

As an integral part of this definition, "economic database" is defined as "a large collection of qualitative and quantitative economic data in different historical periods to evaluate specific economic problems affecting, directly or indirectly, different social groups across different historical times and geographical spaces."

The searching of economic database and documents to evaluate different economic problems were hardly in the past. Because, in the past to searching of economic database and documents to write any document such as a journal paper, book (edited, individual chapter, or full author), policy reports, working paper, projects, or any academic document involve a serial of difficulties such as: (i) the factor time in spending longer hours in libraries, thinks tanks, statistics departments, and government agencies in the process of collection economic database access; (ii) the restriction to obtain full economic database and documents in private or public institutions; (iii) high cost to obtain a hard or soft copy of a large economic database and documents for individual researchers. Before, the collection of economic database and documents sources have been concentrated in a few number of developed countries (monopoly of knowledge) until the world got access to open economic database and documents access in middle of 1990's. Therefore, the fast proliferation of users (researchers) growth exponentially in the decade of 1990s worldwide (Atasoy, 2013) under the uses of a new economic research platform by the uses of the world wide web (www using HHTP that is one of many protocols

of internet) access to worldwide level without borders and limitations of its uses until today. The fast expansion and uses of the internet creates a new alternative information sources access platform to supply or demand a large variety of open database and documents sources virtually everywhere and anytime. The internet opens a new opportunity to researchers and academics in economics improve its research qualitative and quantitatively without any restriction or limitations respectively. Moreover, the main problem became more complex nowadays in getting an easy access to economic database and documents. However, we also can observe that many information centres are supplying many database and documents illegally without any official authorization preliminary. Additionally, the fast spread of fake and illegal (piracy) economic database and documents in internet is generating inconsistency to elaborate trustable economic research to evaluate economic problems. Going forward, we look for possible future evolutions in the collection of economic database and documents access. Possible future face three key challenges: (i) booming of the implementation of advanced economic database digitalization and visualization based on the uses of real time database collection and a multidimensional graphical visualization instantaneously; (ii) the uses of artificial economic intelligence in the economic research; and (iii) the uses of the natural organic economic intelligence systems.

The future uses of the advanced economic database digitalization and visualization is going to be under the uses of advanced software and computers with a high capacity of storage and speed. At the same time, these super-computers are going to be able to simultaneously run a long series of fuzzy stochastic or non-stochastic variables onto infinite equations with a minimum margin of error. The primary objective of the advanced economic database digitalization and visualization is to generate different calibrated possible scenarios under varying levels of risk to evaluate possible policies to solve any economic problem. The main challenge of the advanced economic database digitalization and visualization is moving from the traditional economic database and documents collection to the real-time economic database and documents collection. The second challenge in the real-time economic database and documents collection is the use of the artificial intelligence to solve economic problems, also known as the neural networks approach. The neural networks provide a potentially significant analytical tool to evaluate economic database and documents collection, analysis, and visualization. The primary objective of neural networks is to choose among a large economic database and documents, as well as the most suitable possible economic database and documents to solve an economic problem anytime and anywhere.

These suggestions are originated from a serial of difficulties to collect a valid and suitable economic database and documents from past experiences of successful theoretical or empirical research studies. Therefore, the adaptation of artificial intelligence to solve economic problems is directly connected to a new mathematical modeling such as the chaos theory, logical mathematics, and neural networks. The third profound transformation of the economic database and documents collection is the natural organic economic intelligence (Ruiz Estrada

and Park, 2018). It is based on the interaction of mega-computers, sophisticated software, and practical applications based on the use of advanced computer languages and detailed mathematical algorithms, along with artificial intelligence and robotics systems. In addition, there exists a high probability of applying new multi-dimensional graphs from Econographicology together with holograms. The holograms will be able to show to any researcher the complexity and dynamicity of any economic database or documents access behavior in real time. It also gives the researcher a new visual perception of any economic problem trend from a multidimensional perspective. The researcher is able to interact directly or indirectly into the hologram to observe a large number of variables and equations are interacting in any economic problem simultaneously.

2. Googlekonomia: Model

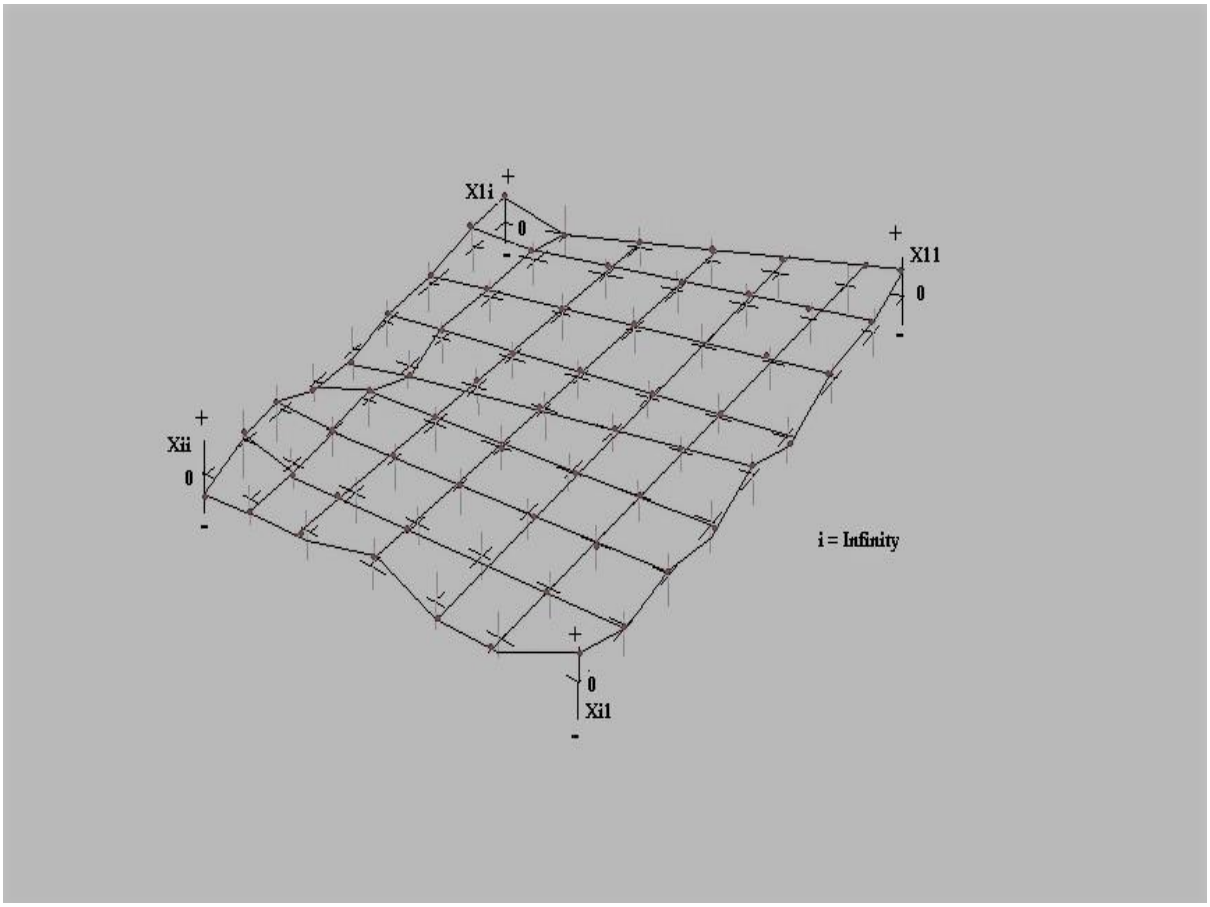
This paper proposes a new economic research technique that is able to generate a large number of search in real time to find the best economic database and documents in internet. The reason is that any economic problem can adopt an unexpected behavior across time and space. The second assumption in the database economic and documents collection is that any economic problem always experiences a dynamic imbalanced state under the application of the Omnia Mobilis assumption (Ruiz Estrada, 2011). Hence, the economic database and documents collection never needs any economic theoretical constraint such as the Ceteris Paribus assumption.

Moreover, the idea of time is totally different from the 2-dimensional linear and non-linear economic database visualization, because 2-dimensional economic database visualization refers to a single and unique time standard under the use of the traditional calendar by months or years to analyze complex and dynamic economic problem behavior. In our personal view, the 2-dimensional economic database visualization framework can show clearly an analytical inconsistency in the short and long run. We assume therefore, that any economic problem can be analyzed from different economic database because each economic database runs following a different speed of time and space. Further, any economic problem experiences different speeds of magnitudes and trends across time and space. If we join different economic database in the same graphical space, then it is possible to observe a series of economic database interacting in different directions with different speeds of time in the same graphical space to evaluate different economic problem(s) simultaneously.

The construction of Googlekonomia is based on the economic database and documents searching in real time can be done with the help of Econographicology (Ruiz Estrada, 2017). Econographicology will supply different multi-dimensional graphical tools. The software required for economic database and documents searching in real time follows various steps. Firstly, a standard format to put in information daily on a line. Second, all these information (qualitative or quantitative data) (I) can be transferred to different economic database (DB) which are interconnected to a unique information data center. And third, the same software can

work immediately to plot different information (I) from different economic database (DB) to the multi-dimensional physical space. Every observation from a database depends on different economic database sources such as the central bank, government agencies, private companies, national statistical departments and public and private research institutes as demonstrated in Fig. 1. Each plotted point in the multi-dimensional physical space is always changing. We use the concept of data changing in real time (See expression 2). Data changes basically in real time are due to the comparison of information (I) between two periods of time (the past and the present period of time). Similarly, the economic database collection and visualization changes in real time are fixed into their coordinate and variable positions all the time. Additionally, we would like to remind that all changes of data in real time plotted in the multi-dimensional physical space are linked together by straight lines which form a single mega-surface in the same physical space. In our case, we are referring to the Economic Database Access Surface (EDA-Surface) (See Fig. 1).

Fig. 1. The Economic Database Access Surface (EDA-Surface)



Source: (Ruiz Estrada, 2011)

The Googlekonomia model in real time routinely starts with the input data of different internet sources as shown below:

$$I_{C:R} = Q_1: Q_2:\ldots:Q_\infty \quad (1)$$

I = Input data Q = Question(s) C = Column R = Row

The next step is the storage in the database (DB) which is described with the help of equation 2.

$$(1.) \quad DB_{C:R} = ☼SI_{C:R} ⫫ \ldots ⫫ ☼SI_{C:R}\ldots \quad (2)$$

$$C = \{1, 2, 3\ldots n\}\ n = \infty$$

$$R = \{1, 2, 3\ldots n\}\ n = \infty$$

Note: Where DB = Database C = Column R = Row ☼ = Running information in real time SI = Save Information ⫫ = Interlink Database

In the case of data changes in real time ($☼\Delta I_{C:R}$), we compare the information we received a day before (t-1 = past period of time) and the information today (t = actual period of time) as presented in expression 3.

$$☼\Delta I_{C:R} = ☼SI(t) - ☼SI(t\text{-}1)/\ ☼SI(t\text{-}1) \quad (3)$$

Finally, the plotting of real time data is illustrated by the following in expression 4.

$$Y_{sf} = f\ (☼\Delta I_{11} ⫫ \ldots ⫫ ☼\Delta I_{\infty\infty}) \quad (4)$$

The Economic Database Access Surface (EDA-Surface) avoids the use of a single dependent variable. This EDA-Surface suggests the replacement of a single dependent variable using a single mega-surface. The EDA-Surface is formed by infinite axes and each axis is located in a vertical position. The same axis shows positive values on the top of the axis and negative values at the bottom of the axis (see Expression 4). Similarly, on each axis, it is possible to observe a point that is pending and moving all the time on its axis up and down. This point represents the behavior of independent variables on its axis. Further, we need to join each independent variable to its next independent variable neighbour by a straight line. Finally, we can observe that the mega-surface (see expression 3) is formed by joining all independent variables. The EDA-Surface is always in constant movement in real time and moving in different directions. The real time modeling effect generating into the EDA-Surface depends on the speed of the information reception that influences directly the behavior of each independent variable growth rate (see Expression 5). We suggest the application of the Omnia Mobilis assumption for the relaxation of all independent variables that are moving into their axis respectively in real time. The EDA-Surface starts by building the growth rate function of each independent variable as shown by the following expression:

$$☼\Delta I_{i:j} = ☼\Delta I(t) - ☼\Delta I(t\text{-}1)/\ ☼\Delta I(t\text{-}1) \quad (5)$$

Where the row: i = {1, 2, 3…n} n = ∞; the column: j = {1, 2, 3…n} n = ∞; Δ = Growth rate; ☼ = Running information in real time; t-1 = past period of time and t = actual period of

time. Each independent variable in the EDA-Surface in the coordinate system can be represented as below:

$$☼\Delta I_{i:j} = (X_{i:j}, Y_{i:j}) \qquad (6)$$

Where X = {-∞ … -3, -2, -1, 0, 1, 2, 3…∞+} and Y = {-∞ … -3, -2, -1, 0, 1, 2, 3…∞+}
The next step is to build the final EDA-Surface given by (i x j).

$$☼\text{ EDA-Surface} = \begin{pmatrix} ☼\Delta I_{11} \Vdash ☼\Delta I_{12} \Vdash \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \Vdash ☼\Delta I_{1\infty} \\ ☼\Delta I_{21} \Vdash ☼\Delta I_{22} \Vdash \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \Vdash ☼\Delta I_{2\infty} \\ ☼\Delta I_{31} \Vdash ☼\Delta I_{32} \Vdash \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \Vdash ☼\Delta I_{3\infty} \\ . \quad . \quad . \quad . \\ . \quad . \quad . \quad . \\ . \quad . \quad . \quad . \\ ☼\Delta I_{ij} \Vdash ☼\Delta I_{i+1j+1} \Vdash \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \Vdash ☼\Delta I_{\infty\infty} \end{pmatrix} \qquad (7)$$

Where i = {1, 2, 3…∞}; j = {1, 2, 3…∞} and "⫦" is equal to the interlinking variables.
Finally, the analysis of the final mega-surface is based on the location of all independent variables in the EDA-Surface. Hence, we have the following three possible results:

(1) If ☼ EDA-Surface > 0 then our EDA-Surface becomes black in colour, indicating an easy economic database access.

(2) If ☼ EDA-Surface = 0 then our EDA-Surface becomes grey, showing a hard economic database access.

(3) If EDA-Surface < 0 then our EDA-Surface becomes light grey, representing an impossible economic database access.

Put simply, the colour of the EDA-Surface can alert us just in time in case of a possible impossible economic database access. We would like to state that we cannot stop to get an easy economic database and documents access. However, we only can reduce the damage caused by the limited access to the economic database and documents respectively. Therefore, the findings of the best economic database have serious implications for both researchers and policy makers.

3. The Drawing of Economic Database Access Surface (EDA-Surface)

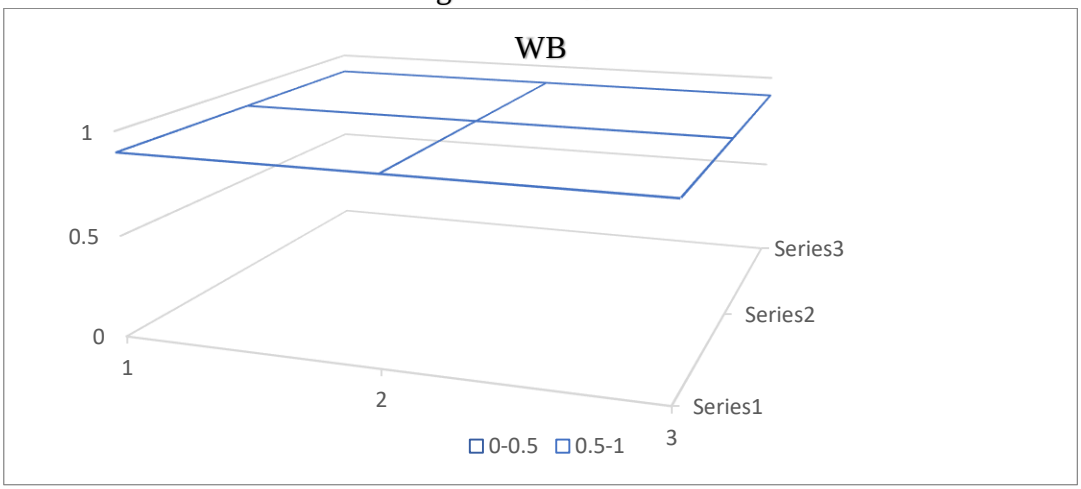
The construction of EDA-Surface depends on the expression 7. In our case, the EDA-Surface is a matrix three by three that allows keeping the nine main-nine database results in analysis. The idea to use only nine main-database results in the construction of EDA-Surface is to build a symmetric surface. Therefore, if the EDA-Surface keeps the same number of rows and columns, then the EDA-Surface always can show a perfect symmetric view. The general objective to build the EDA-Surface is to visualize graphically all results from the expression

7. The EDA-Surface can allow the visualization of strengths or weaknesses points in any economic database access. The analysis of each economic database result from the EDA-Surface depends on three different levels of access: The first level of the economic database access shows that if the result from the expression 7 is between 1 and 0.67, then this economic database can experience an easy economic database access. The second level of the economic database access shows that if the final result from the expression 7 is between 0.66 and 0.34, then this economic database can experience a hard economic database access. The third economic database access level shows that if the final result of the expression 7 is between 0.33 and 0, then this economic database access can experience an impossible economic database access.

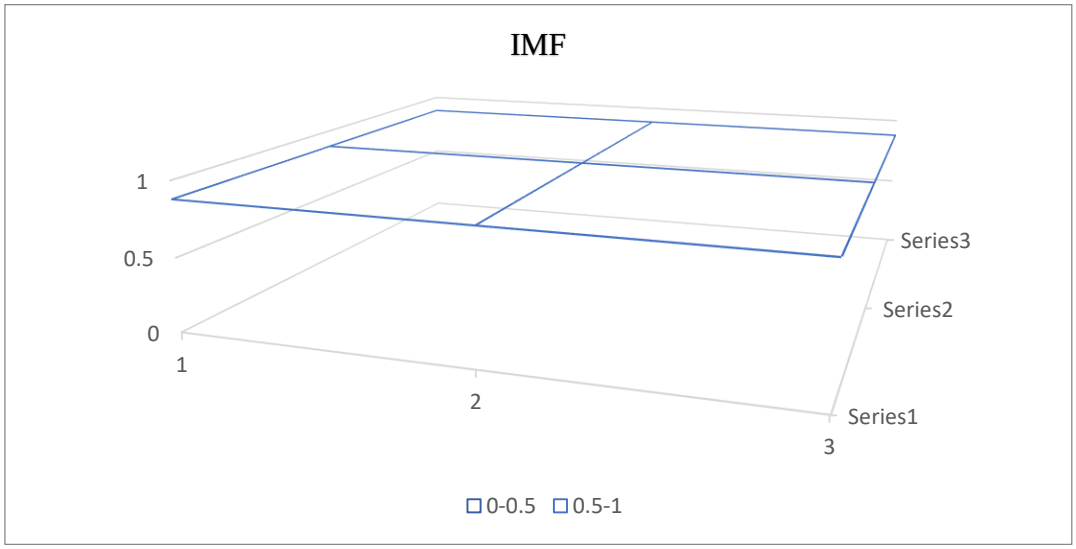
4. The Application of Googlekonomia in Large Economic Database Repositories: World Bank (WB), International Monetary Fund (IMF), and OECD

For the research of this paper, the EDA-Surface was applied to 3 different papers: World Bank (Database-1 access) (See: www.worldbank.org); IMF (Database-2 access) (See:www.imf.org); the third database was the OECD (Database-3 access) (See: www.oecd.org). Initially, the EDA-Surface in Database-1 and Database-2 access is equal to 0.90 points and 0.88 respectively (easy economic database access) and for database-3 is equal to 0.60 points (hard economic database access). In the case of Database-3 access, its low is originated by the hard access to the full economic database and documents in this web page. The hard economic database access from the Database-3 is possible to be visualized on the EDA-Surface (see Figure 2). Hence, the uses of EDA-Surface can facilitate the visualization of the weakness point of Database-3 access from a graphical perspective. After we find the weaknesses of Database-3 access, now it is possible to generate a serial of recommendations: First recommendation for Database-3 access is the uses of free open sources access to the general public. Second recommendation for Database-3 access is to include more non-economic database and documents in its homepage. Third recommendation for Database-3 access is the decision about more developing and least developed countries can get easy and free economic database and documents without any restriction. And Fourth recommendation for Database-3 access is to divide by regions to get free economic database and documents access to different government agencies, policy makers, and academic institutions that can help to improve the research to solve economic problems anywhere and anytime.

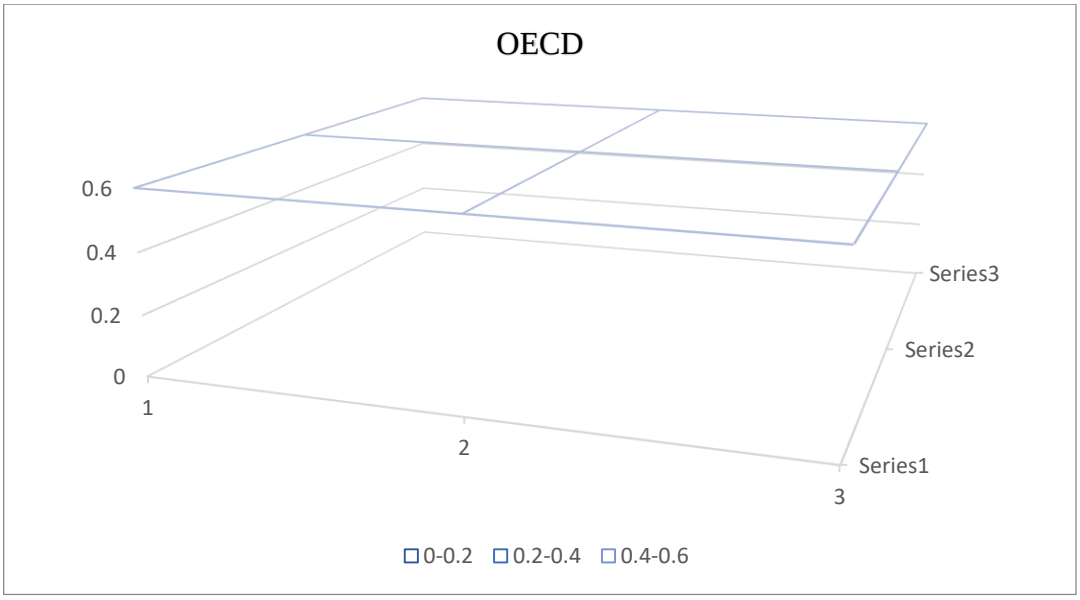
Fig. 2: EDA-Surface



Source: www.wb.org



Source: www.imf.org



Source: www.oecd.org

5. Conclusions

Our study makes it abundantly clear Googlekonomia can open a new economic research technique to academics, policy makers, and social scientists in the study of complex and dynamic economic problems that can affect our society anytime and anywhere without borders. The access to economic database and documents is constantly evolving and changing, at remarkable speed, in line with the rapidly changing informatics and communication technologies. Googlekonomia is continuously enriched and enhanced by uses of new database searching tools and exploration of new websites. Finally, the Googlekonomia is a powerful economic research technique that adapts any technique, methodology, method, and model from a wide range of technologies – e.g. mega-computers, tablets, hand phones, internet, software, applications, and robotics - to rigorously find, classify, and evaluate the complex collection of economic database and documents that plays an important role to study and evaluate economic problems anytime and anywhere. Googlekonomia will be sure to make a central contribution to this vital endeavour.

6. References

Atasoy, H.: The Effects of Broadband Internet Expansion on Labor Market Outcomes. ILR Review, 66(2), 315-345 (2013)

International Monetary Fund (IMF): General homepage. Retrieved from: www.imf.org (2018)

Organisation for Economic Co-operation and Development (OECD): General homepage. Retrieved from: www.oecd.org (2018)

Ruiz Estrada, M.A.: Policy Modeling: Definition, Classification and Evaluation. J. of Policy Model. 33(3), 523-536 (2011)

Ruiz Estrada, M.A.: An Alternative Graphical Modeling for Economics: Econographicology. Qual. and Quant. 51(5), 2115-2139 (2017)

Ruiz Estrada, M.A., Park, D.: The Past, Present and Future of Policy Modeling. J. of Policy Model. 40(1), 1-15 (2018)

World Bank (WB): General homepage. Retrieved from: www.wb.org (2018)