Towards a Holistic Approach to Economic Development: Incorporating Institutional and Schumpeterian Economics into Development Dynamics

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Abstract:

Purpose: This article tries to locate the deeper roots for high development performance of an economy to take place, focusing on its most decisive factors, being the institutional structures that provide the incentives for human choices and behaviors, i.e., trust, cooperation, security, participation, risk and entrepreneurship.

Design/Methodology/Approach: Using the theoretical lens of institutional economics, expressing their key concepts as measurable variables and considering the framework of modern growth strategies, it became feasible to form a simulation model of the development process, used as the conceptual model that formed the framework for measurable variables to be utilized under the methodological approach of SEM, providing a path diagram of 13 factors, with data from 61 countries for the time period from 2017 until 2019.

Findings: Results suggested that the necessary conditions for production chains to be interconnected and pioneering development to take place are open market structures and efficient institutions of entrepreneurship, provided also that institutions of political isonomy and conditions of creative destruction penetrate throughout the development process.

Practical implication: Modeling economy as a complex dynamic system of changing structures and behaviors, one can incorporate the view from a policy maker who is in charge of stimulating the innovative capacity of human capital, aiming at changing behaviors through experimentation with institutional interconnections, being committed to citizen inclusiveness into the decision making processes.

Originality/value: This article offers an alternative view of the production cycle, not of an industrial product, but of GDP, utilising the analogy of the production space of a firm, and extending it to the evolutionary dynamics of an economy, theorised as a networked system of institutional structures that provide the productivity apparatus for the envisioning of the new cultural and technological trends.

Keywords: Institutional Conditions, Development Mechanisms, Production Environment, Entrepreneurship, Political Isonomy, Innovation

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1. Introduction

Economic development must be placed in the context of modern economic conditions. The development strategy today is based on the evolutionary dynamics that are constantly emerging from the productive interconnection of knowledge economy with information technology. Technology is a vital element of competitiveness and accelerating the pace of technological change is a prerequisite for each country to participate effectively in globalization.

Economic growth cannot be simulated as a process of linear evolution, as it relies on institutional structures that can be corrected or even completely transformed, during adjustment periods of their productive contribution. These institutional structures concern the allocation layout of the productive factors and the competitive restructuring of the economic sectors of agriculture, industry and services.

Therefore, sustainable economic development is essentially a process of redistribution of resources to economic sectors that have successfully managed to be structurally transformed into niches of high productivity, thus defining the developmental capacity of an economy as its degree of readiness and flexibility to diversify its production structure endogenously.

The main development path is through strengthening of economic ties within the country and creating domestic technological capabilities, accompanied by creative disaster, a process by which new technologies and business plans take the place of old ones. The industrial and digital services sectors are making a strong contribution to this diversification process, being themselves the product of open institutions that facilitate innovative dynamics (Hausmann *et al.,* 2013).

The long-term growth prospects depend on the dynamics of learning economies, which provide creative platforms for economic agents to gain knowledge and experience from productive collaborations. In addition to boosting the productive capacity of an economy in a growing range of industrial products, it is also important that businesses focus on learning new activities rather than focusing on existing skills.

This proves that growth can be accelerated through structural U-turns, specifically in the direction of industry. Forms of industrial diversification provide opportunities for the interconnection and dissemination of knowledge, therefore development take-offs are linked to manufacturing-industry performance, promoting manufacturing as the best platform for the transition to innovative activities with untapped productivity potential (Kniivilä, 2007), functioning at the same time as a conduit for future structural change.

2. Literature Review

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2.1 Theoretical Overview

So, the central lesson from modern economic strategy is that growth comes from the domestic expansion and consolidation of the economy of knowledge, learning and the resulting culture of creative destruction, both at the level of political institutions and entrepreneurship. Now it is time to turn to economic theory to confirm this shift in the structural priorities of growth dynamics. The aim is to find the substantiated references of theory to the issues of development and to ascertain the degree of readiness of the analytical tools available, for the adequate enlightenment of the emerging and potentially evolutionary mechanisms that lurk in an existing economic environment.

Each research approach to development is shaped by the theoretical prism with which it is examined and by the corresponding toolbox that accompanies it. Each theoretical representation of economic development narrows or widens the field of vision from which it examines it, and thus the empirical course of research is guided by a different, each time, direction and orientation. With neoclassical theoretical approach, for example, we take as factors of the development equation only the factors of production, or with the neo-Keynesian approach we add capital resources of state's budget.

With neo-institutional approach, the development trajectory of an economy is based on the intergovernmental structures and the regulatory institutional background of economic activities and behaviors, and thus with this approach we expand the range of factors under study and their possible interactive combinations. However, all empirical research, of any theoretical framework, documents the correlation between different measurable variables and contributes positively to the completion of the, under construction, interpretive edifice.

More specifically, in the new theory of endogenous development (Romer 1986; Lucas 1988), technological innovation and advancement in knowledge are at the heart of its differentiation from the neoclassical model. The neoclassical model relies on only two factors of production, capital and labor, and considers technology or knowledge as exogenous factors, assuming that advancement in technology results from random scientific and technological discoveries.

Instead, the new theory incorporates technological development and advancement in knowledge as endogenous factors within the development model, as they are the result of conscious decisions made by entrepreneurs. Industrial policy's challenge is to better understand how it can support growth by linking and coordinating productive and technological capabilities with new economic activities.

The new economic theory proposes for development strategy to focus not only on the impetus of the final products of R&D, but also on the phase of creating knowledge and monitoring the stages and ways of acquiring it, as well as how it

adapts, how it spreads and its use in differentiated local environments. The use of new technologies requires education as well as specialized training. Also, in addition to training, the use of new technology often requires access to additional inputs, such as supporting industries, licensing, and funding channels for new equipment.

With innovation as the catalyst for evolution and entrepreneurship as the economic engine, political and economic structures are constantly rearranging, under the persistent influence of creative disaster. The two most promising methodologies for analyzing the phenomenon of development, in this multidimensional version, ultimately end up being the systemic approach to innovation and the toolbox offered by the concept of economic complexity.

In terms of the systemic approach, the five building blocks of innovation systems, that demonstrate that innovation is widely distributed across the spectrum of processes of the invention, are: (a) The regulatory and public policy framework; (b) the institutional framework and governance structure, (c) business ecosystem and access to finance, (d) human capital and (e) R&D infrastructure.

Successful reforms are those that unleash the dynamic of all the above development mechanisms, and contribute holistically to the turn towards a favorable evolutionary trajectory. Innovation is ultimately summed up in terms of economic complexity, measurable as an index (ECI) by Harvard University, which brings together most of the factors of the innovation phenomenon (Hausmann *et al.,* 2013).

2.2 Empirical Overview

In order to approach the development phenomenon further, it is useful to translate the theoretical findings into resulting practical policy proposals, in order to demonstrate the perceptual breadth and depth of theory's penetration into the development phenomenon.

Empirical research is directly related to implemented policies, because they legitimize them. The following is a list of key empirical studies that have delineated, broadened and clarified the scope of development analysis up to date. There isn't so far a comprehensive methodology that marries the richness of the multidimensional theoretical concepts of economic institutions with empirical findings from literature, in order to holistically approach the multifaceted development phenomenon.

Economic growth has only being addressed by exploiting some of its dimensions each time. As theoretical review showed, the dimensions of growth are four: the fiscal approach, institutions of entrepreneurship, knowledge economy and the innovation system approach. The correlations field of measurable variables from each empirical study that follows reveals the partial and fragmentary approach so far, to the complex mechanics of economic dynamics.

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In public finance, Barro (1990) established a positive correlation between public spending and economic growth, using time series and cross-section panel data. Sturm (1998) also found out that public capital contributes to growth with a higher marginal product than that of private capital. From tax perspective, Djankov et al. (2010) proved that high personal and corporate tax rates burden entrepreneurship initiatives, consequently reducing economic activity.

The link between tax system and sustainable economic growth is clear, through the promotion of macroeconomic stabilization, the improvement of resource allocation and the enhancement of overall factor productivity (Cottarelli and Keen, 2012). The goal of interstate tax competition requires the establishment of a transparent regulatory framework, simplification of the available legal forms, a focus on financing methods and the effective transformation of tax structure into an incentive structure (Lindholm-Dahlstrand and Stevenson, 2010).

However, research located contradictions in productivity performance when utilizing exclusively the above fiscal factors to interpret dysfunctioning forms of economic activity. Even if all countries have similar entrepreneurial incentives and benefits, the institutional foundations stands as the decisive structural level that mediates economic actions and determines their productivity outcome (Bjørnskov and Foss, 2013; Baumol and Strom, 2007). Research thus, started to incorporate the institutional parameter in the fiscal approach to development (Fatas and Mihov, 2013), or alternatively, established the dimension of entrepreneurship as a distinguished productive factor in the development equation (Koellinger and Thurik, 2012).

Conditions were ripe for synthetic conceptual considerations to appear, attempting to unify the results of entrepreneurship and institutions, combined as an ecosystem. An articulated example was that of a technology–driven business ecosystem that is self-powered through mutual interconnection of technology and business culture, productively contributing to innovative growth (Sussan and Acs, 2017). Subsequently, the idea of the National Entrepreneurship System (NSE) emerged, bringing together human service with the institutional framework in an interdependent system of complementarity. (Acs et al, 2018)

One of the key metrics of the development potential of an economy is its innovation capacity and studies emphasize enough the importance of R&D activities as the main engine of innovation-driven development (Batabyal and Nijkamp, 2013), as well as by human resources provided by education. Human capital can directly improve overall productivity and enhance business performance through innovation, imitation, or the adoption of new technologies (Teixeira and Fortuna, 2004). Delong and Summers (1991) has also added to literature the great beneficial contribution that comes from public expenditure on innovation, by showing the surplus in the rate of social return from this spending versus the rate of private return.

Exploring further the dimension of innovation, research demonstrated that growth involves processes of creative destruction through the developmental logic of technological progress and innovative R&D activities (Aghion and Howitt, 1992). Conditions fertile to innovation and knowledge economy embed an economic environment inducive to long-term economic growth. (Fagerberg, 2004).

By reconnecting innovation to fiscal policy, literature introduced the concept of an innovation system, the impact of which becomes strong provided that intergovernmental structures encourage civil society's participation throughout the circulatory system of knowledge and commercial use (Mason and Brown, 2014). The innovation ecosystem provides the conditions for achieving collaborations, enabling companies to develop new methods, exploit diversified resources, attract financial investment and create new production lines (Antonelli and De Liso, 1997).

Hanusch *et al.* (2017) developed an analytical framework called 'overall neo-Schumpeterian economics' (CNSE), which is based on three pillars of institutional integration, namely economic, political and financial behavior. According to the model, innovation penetrates into all areas of socio-economic life, i.e., the institutional architecture through which the dynamic evolutionary processes of a society take place. This distinguishes the intricately developed autonomy of each individual pillar - public, financial and market - and the evolving process of innovation to which they interact.

The role of the public sector is also emphasized, as an influencer and facilitator of the collective potential to act in the development process, through specific investments with mega projects in defense, health and transportation or research and education infrastructure, fulfilling the role of a "Entrepreneurial State" (Mazzucato, 2011).

Theories and corresponding empirical research therefore, show that any proposed new government policy measure should ask itself whether it enables society to innovate, promotes social and economic flexibility, or hinders and punishes innovation and entrepreneurship. Knowledge cannot be exploited from a depository and become one's own property. It can only be creatively utilized by being shared and combined through complex interaction networks. Knowledge can only be accumulated, transferred and stored if it is integrated into networks of individuals and organizations that use this knowledge in productive use.

The approach to innovation ecosystems has thus been significantly expanded by a specific thread of Schumpeterian economics, which emphasize competition with winners and losers, has a strong focus on innovation-driven governance, on transaction costs borrowed from the new institutional economics and on the evolutionary approach to institutional and political change.

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What emerges from the above research is the effort to integrate more factors into the growth equation and to address economic development as an ecosystem, where factors interact with each other, creating order and patterns through the complexity of interrelationships. These regularities, although transient due to continuous processes of creative destruction, nevertheless function as active structures that determine visible and measurable results.

The methodology that can identify these starting points of change, determine their limits of action and give an approximate numerical value to their resulting performance, is identified as a holistic approach to economic development. This approach, missing from literature, is mainly aimed at investigating and revealing any unexpected correlations between factors, indicated from research as dominant and decisive in the development process.

3. Research Methodology

The purpose of the methodology is not to establish a model that accurately predicts the overall development performance of a country. The intention is to map the structural and institutional areas that contribute in combination to the productivity of economic factors. The influence of institutional factors regarding fiscal policy, intergovernmental structures, entrepreneurship and innovation, are linked within a single system to reveal their inter-causal relationships.

Although a performance forecasting model is not sought, it is feasible to establish performance indicators of areas contributing to growth impact. The validity and effectiveness of the proposed methodology is argued through a detailed presentation of the steps followed to end up with this evolutionary trend detection method.

Firstly, theoretical concepts were integrated into a common framework of empirical verification, from which the structural development factors were distinguished and classified into a conceptual model. The conceptual model provided the framework from which to draw the most representative sample of quantitative variables that can be found in global collection and data storage economic organizations.

The conceptual model also acted as a guide in the ex-ante separation and grouping of variables in four dimensions. It arranged and prepared the variables to be submitted to econometric analysis, based on their theoretical relevance, satisfying the epistemological criteria. However, the goal of the methodology is not to study the four structural aspects separately but to penetrate within their interactions, establishing communication between these four structural dimensions and thus accessing the holistic and systemic approach of economic development.

The appropriate methodology for entering the core of the development phenomenon requires the creation of a causal model using the method of structural equations modeling (SEM). The confirmatory factor analysis (CFA) stage precedes, as it is a

measuring technique of the validly and reliability of the theory-driven factor structure. The value limits of the criteria to be met are as follows: (a) Composite Reliability (CR), CR > 0.7 (b) Convergent validity, [Average Variance Extracted] AVE > 0.5 (c) Discriminant validity, [Maximum Shared Variance] MSV < AVE and (d) square root of AVE > correlations between factors.

Succeeding in these criteria, the factors confirmed, gain the status of a latent factor, meaning the unmeasurable quantity that causally lies behind its corresponding measurable variables. The limit for the set of variables to be jointly processed and function as a single system is around ten to thirteen variables. This asterisk has to do with the increased volume of the dataset required in case of a larger set of variables, but also with the increasing complexity of the resulting multi-factor equations, which may not lead to valid results.

For the validity of statistical results, data was collected from a sample of 61 countries of both the developed and developing world, during a time span of three years, specifically with annual measurements for 2017, 2018 and 2019. The final number of selected variables is thirteen and therefore the sample of the dataset, also called pool, cross-section dataset, is 61 X 3 X 13, i.e. 183 measurements for each 13 variables. The selection of the thirteen observable variables is considered expedient and non-negotiable, based on their central and key importance from theoretical and empirical point of view. The following Table 1 contains the variables, their brief definition and their source.

Table 1. *The Set of Variables, their source and their definition*

Variable title	Source	Brief definition of the measurement content
1. Ease of doing Business score	World Bank	The "Borderline" rating shows the distance of an economy from the "border", which represents the best performance in any Doing Business issue. The scale ranges from 0 to 100, where 0 represents the lowest yield and 100 the highest.
2. Trade Freedom	Heritage Foundation	Ability of citizens to interact freely as buyers or sellers in the international market, given the development of global supply chains and cross-border production processes. Trade restrictions can be manifested either in the form of customs duties, export taxes, trade quotas or complete trade bans, or in the form of licenses, standards and other regulatory actions.
3. Paying taxes	World Bank	Payments, time, total tax and contributions for a company, as well as the procedures for completing an application to complete a corporate income tax correction.
4. Government Effectiveness	World Bank	Perceptions of the quality of public services and their degree of independence from political pressures, the quality of policy-making and implementation, and the credibility of government commitment to such policies. Score from -2.5 to 2.5.

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5. Rule of Law	World Bank	Perceptions of the extent to which actors trust and comply with the rules of society, and in particular the quality of property rights, the police and the courts, and the likelihood of crime and violence. Score from -2.5 to 2.5.
6. Control of Corruption	World Bank	Perceptions of the degree of exercise of public power for private gain, small and large corruption and "conquest" of the state by elites and private interests. Score from -2.5 to 2.5.
7. Financing of SMEs *	World Economic Forum	In your country, to what extent can small and medium-sized enterprises (SMEs) have access to finance through the financial sector? [1 = not at all • 7 = to a large extent]
8. Extent of staff training	World Economic Forum	In your country, to what extent do companies invest in employee training and development? [1 = not at all • 7 = to a large extent]
9. University/ind ustry research collaboration	World Economic Forum	In your country, to what extent do businesses and universities collaborate in (R&D)? [1 = do not cooperate at all. 7 = cooperate extensively
10. PCT Patent applications	OECD	Number of applications submitted under the Patent Cooperation Treaty (PCT) per million population
11. International co-inventions	World Bank	Number of patent applications with co-inventors abroad, per million population
12. Labour Freedom	Heritage Foundation	Degree of ability of individuals to find employment opportunities, as well as companies to hire and lay off employees when they are not needed. Voluntary exchange in the labor market and not government intervention, through wage controls, working hours or other restrictions.
13. Market capitalization *	World Bank	It is calculated as the share price of all listed domestic companies multiplied by the number of their outstanding shares. Excludes investment funds, mutual funds and companies whose sole purpose is to hold shares in other listed companies. The data are year-end prices

Note: * data missing for 2017.
Source: Own study.

The precise description of the content of each variable helps to show the limits of its measurement field and thus to exclude the case that the areas and the object of measurement overlap. Where the variable refers to survey responses, this survey is the longest-running of its kind and provides annual assessments of critical aspects of competitiveness, for which statistics are either impossible or extremely difficult to measure. The purpose of the questionnaires is to capture the reality as comprehensively as possible and the questions are asked to business leaders, who are

arguably better able to assess the business environment in which they operate (World Economic Forum - The Executive Opinion Survey).

Each variable's value comes from the separate methodology followed by each organization that produced it. The units of measurement and the scale in which the numerical values are expressed, are different from each other but this does not prevent them from being jointly listed and processed by the statistical methodology, as the CFA and SEM methods, only consider variance displayed by each variable, which is not altered by the unit of measurement. Furthermore, where necessary, the data were subjected to standardization, at which point they were released from their original unit of measurement and scale and acquired a neutral metric and missing values were imputed with regression techniques.

3.1 Analysis of the Conceptual Model

The latent factors that were confirmed by the CFA stage are shown Table 2, followed by the validity checks of Table 3, that show that the above criteria are met. Graphical representation of the results from the CFA stage is given in Figure 1, of which the numerical values shown will be discussed in the results section below.

Figure 1. *CFA diagram, with coefficient values of Standardized Regression Weight and Squared Multiple Correlation between latent factors and their corresponding variables*

Source: *Own study.*

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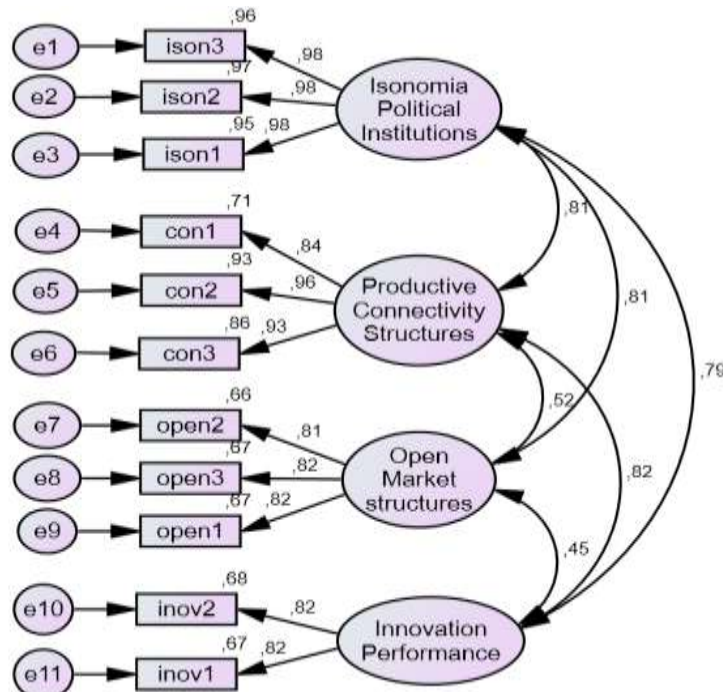
Table 2. *CFA stage for Structural Equation Modeling (SEM) and Path Diagram*

Code tag	Variable Name	OpenMarket	Isonomia	Connectivity	Innovation
		Latent Factor Title			
open1	1. Ease of doing Business score	>>>>>>>>>>>			
open2	2. Trade Freedom	>>>>>>>>>>>			
open3	3. Paying taxes	>>>>>>>>>>>			
ison1	4. Government Effectiveness		>>>>>>>>>		
ison2	5. Rule of Law		>>>>>>>>>		
ison3	6. Control of Corruption		>>>>>>>>>		
con1	7. Financing of SMEs			>>>>>>>>>>>	
con2	8. Extent of staff training			>>>>>>>>>>>	
con3	9. University/industry collaboration			>>>>>>>>>>>	
inov1	10. PCT Patent applications				>>>>>>>>>>
inov2	11. International co-inventions				>>>>>>>>>>
freelab	12. Labour Freedom				
mcap	13. Market capitalization				

Source: Own study.

Table 3. *Factor reliability checks at CFA stage*

	CR	AVE	MSV	MaxR(H)	OpenMarket	Isonomia	Connectivity	Innovation
OpenMarket	0,856	0,665	0,663	0,856	**0,815**			
Isonomia	0,986	0,960	0,663	0,987	0,814	**0,980**		
Connectivity	0,937	0,833	0,672	0,955	0,520	0,807	**0,913**	
Innovation	0,803	0,671	0,673	0,803	0,453	0,786	0,820	**0,821**

Source: Own study.

It is first necessary to explain the conceptual framework, on the basis of which the econometric model was compiled. The OpenMarket factor indicates the degree of openness of market structures and represents the first dimension of the development model. This index fully expresses the nature of the market in the totality of its manifestations, based on three central axes of its operation. First, its structural layout in the interior of the economy, second, its extroversion, interconnected with global markets, and third, its institutional structure by the way it is motivated and supervised by the government, with taxation as its main tool.

The first axis of the internal market is represented by the equivalent score of the ease with which a business initiative can be undertaken (Doing Business – World Bank). Accordingly, all structural facilities that provide openness to and from foreign markets are measured by the Heritage Foundation's index of economic freedom in relation to extroverted trade. The paying taxes index from World Bank reveals the magnitude of liberalization and digital modernization of the imposed regulations for business activities and the degree of flexibility allowed for labor market. The

OpenMarket factor therefore includes the basic guidelines of path dependence, on which the evolutionary market code is directed.

Turning to the Isonomia factor, it indicates the degree of isonomy/equality that characterise political institutions. Equality level is determined by the extent to which government decisions take into account and serve the interests of the wider community. It is an indirect indicator of the degree of participation and inclusiveness of citizens in political decisions and economic activity, shaping trends and choices.

The three axes with which it is determined are firstly, the quality of the intergovernmental structure, revealing how political power is excersised and its behavioral properties. The second axis is the degree of freedom and autonomy of citizens in expressing and claiming their needs and securing them against any political or economic arbitrariness. And the third axis is the degree of inequality of political power, which translates into hindering or else facilitating healthy evolutionary change, involving processes of creative disaster in the field of political institutions.

The Isonomia factor represents the second dimension of the conceptual model. The first axis about Isonomy is adequately covered by the index of government efficiency by World Bank. It attributes the quality of public services and therefore the government's predisposition to integrate citizen's interests into decisions. This condition refers to the degree of evolution from the stage of government to intergovernmental structures, i.e., structures of citizen participation.

The second axis is adequately attributed to the index of the perceptions about rules of law, containing the theoretical arsenal of North on property rights, contracts and informal rules of trust, that forms the basis for freedom and equality status of citizens. The third axis about the balance of power within society can be represented by institutional protection against corruption and hegemony of the elite, ensuring isonomy. The factor Isonomia ultimately means the triptych of integration - securing - balancing.

The third factor and dimention of the structural model, Connectivity, indicates the interconnection of productive structures. This indicator includes knowledge and especially its dissemination and subsequent commercial use. At its core it presents the macroscopic picture of the maturity of the innovation system, touching on the three of its basic components, i.e., technical training of human capital within companies, creative presence of universities in the creation of knowledge adapted to demand, allowing confrontation for urgent social needs and finally, secure funding for vulnerable start-up companies, being their oxygen and propellant fuel for their innovative visions.

All three dimensions of Connectivity factor are measured by the corresponding questionnaires of the Executive Opinion Survey of the World Economic Forum, as

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indices of staff training, university / industry research collaboration and financing of small and medium enterprises.

The fourth factor, Innovation performance, presents the degree of maturity of the innovation process, through two quantities that do not refer to structures or institutional arrangements. The values of these two quantitative variables, in addition to performance that is declared as numerical information, also indicates qualitative characteristics of the innovative profile of an economy.

The awarded patents show the innovative zeal and refer to favorable business conditions and the variable of international co-inventions inform about the deepening of business connections and the culture of cooperation for high scientific goals. This factor also indirectly radiographs the completion of the product cycle, from stages of research, patent, invention and final construction of the innovative product, conceptually approaching economic complexity index (ECI). The term innovative performance thus refers to the degree to which the "valley of death" is exceeded, an technical expression for the lack of bridging between basic research phase and commercial exploitation.

4. Results

After establishing a valid CFA, the next step is to try to incorporate the latent factors structure within a causal model through SEM, shown in Figure 2. Strict checks, called model fit checks, were performed in order to verify whether the latent factors structure of the model under investigation can reproduce with close approximation the actual data, and therefore can be considered as accurate predictors with small percentage of deviation.

The results show that CFI took the value 0.928, NFI 0.908, IFI 0.929 and TLI 0.907, which are considered almost sufficiently satisfactory, since they exceed the value 0.9. AGFI took the value 0.765, which is satisfactorily close to 0.8, considered high grade, and the RMSEA index scored 0.129, again slightly above the limit of 0.1, something that is justified since the data sample has missing values for some variables.

Figure 2 also shows the Standardized Regression Weights, in the middle of the arrows that connect the latent factors with the observable variables and with each other, all satisfying the criterion of statistical significance (p-value). This coefficient indicates the degree of influence of one variable on the other, in addition to the direction of the arrow.

The numeric values placed at the corner of each variable's orthogonal box or latent factor's ellipse indicate the Squared Multiple Correlation value, a value that indicates the percentage of variance explained by the variable from which the arrow originates, making the specific variable a reliable predictor for the variable on which

its arrow targets. The remainder of the percentage - the difference from value 1.00 - indicates the percentage of variance explained by the magnitude of the residual/error term associated with each endogenous variable, and represents the remaining measurable quantities unknown to us that contribute to the prediction. Standardized Regression Weight and Squared Multiple Correlation are also expressed by the numerical values shown in Figure 1 from the CFA diagram.

Figure 2. *Definitive form of the causal model, together with coefficient values of Standardized Regression Weights and Squared Multiple Correlation.*

Source: *Own study.*

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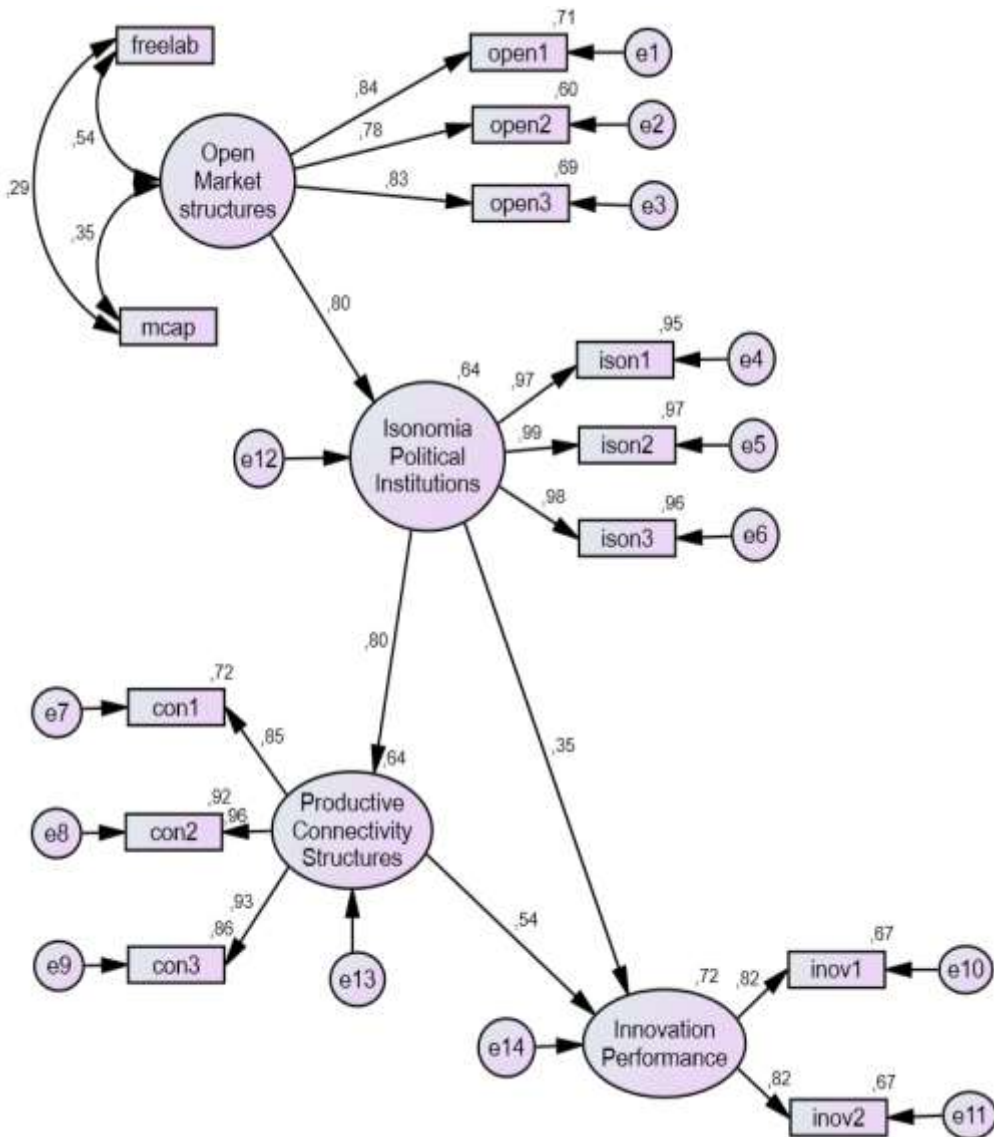
The causal model is also complemented by two variables that accompany the exogenous factor of Open Market structures. They are two measurable economic variables that give the stigma of the economic environment, specifically the labor market parameter and the amount of capital that is invested in the listed companies of the stock exchange. The labor market is important because it refers to the mobility of the most important factor of production, which is human capital.

Respectively, the capitalization of large companies reflects the mobility of business activity. Thus capital, labor and their institutional regulation are represented by these two variables and are included in the model in order to correlate with open market structures, without having a causal or predictive effect themselves on the endogenous factors.

They are simply listed as initial conditions from which the influential sequences originate and it is useful to reveal the weight of their contribution to the dominant agent, OpenMarket, from which the path diagram is radiated.

The OpenMarket factor is thus the exogenous, independent latent factor, being in co-variance with the variables of Labor Freedom and Market Capitalization. It contributes positively on the system of endogenous factors, the factors Isonomia, Connectivity and Innovation, which themselves function as latent factors for the observable variables that are causally raised by them. These latent factors are explained with a high degree of accuracy - from 64 to 97%.

The path diagram shows that correlations between latent factors, in the form of standardized coefficients, are strong of the order of 80%, either in direct way, between OpenMarket and Isonomia, or by summing the indirect routes between Isonomia and Innovation through Connectivity, as well as between OpenMarket and Innovation through both Isonomia and Connectivity.

The correlation between Connectivity and Innovation is about 54%, and between OpenMarket and Connectivity and Innovation about 64%. All the correlations between factors are presented in Table 4, indicating that the factors have a strong predictive value, in the order and direction determined by the Path Diagram.

In addition, Table 5 presents Factor Score Weights, which are the calculated values of the effect of each variable with all four latent factors. With these coefficients we can have a value - score of each latent factor for each country from the sample of 61 countries (see Tables 8, 9, 10).

Table 4. *Standardized Direct, Indirect and Total Effects between factors and variables*

	Open Market Structures			Isonomia Political Institutions			Connectivity Structures			Innovation Performance		
	Direct	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*
Isonomia of Political Institutions	0,80	0,00	0,80	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Productive Connectivity Structures	0,00	0,64	0,64	0,80	0,00	0,80	0,00	0,00	0,00	0,00	0,00	0,00
Innovation Performance	0,00	0,63	0,63	0,35	0,43	0,78	0,54	0,00	0,54	0,00	0,00	0,00
open1	0,84	0,00	0,84	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
open2	0,78	0,00	0,78	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
open3	0,83	0,00	0,83	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
ison1	0,00	0,78	0,78	0,97	0,00	0,97	0,00	0,00	0,00	0,00	0,00	0,00
ison2	0,00	0,79	0,79	0,99	0,00	0,99	0,00	0,00	0,00	0,00	0,00	0,00
ison3	0,00	0,79	0,79	0,98	0,00	0,98	0,00	0,00	0,00	0,00	0,00	0,00
con1	0,00	0,54	0,54	0,00	0,68	0,68	0,85	0,00	0,85	0,00	0,00	0,00
con2	0,00	0,62	0,62	0,00	0,77	0,77	0,96	0,00	0,96	0,00	0,00	0,00
con3	0,00	0,60	0,60	0,00	0,75	0,75	0,93	0,00	0,93	0,00	0,00	0,00
inov1	0,00	0,51	0,51	0,00	0,64	0,64	0,00	0,44	0,44	0,82	0,00	0,82
inov2	0,00	0,51	0,51	0,00	0,64	0,64	0,00	0,44	0,44	0,82	0,00	0,82

Source: Own study.

Table 5. *Factor Score Weights for the calculation of country Rankings*

	open1	open2	open3	ison1	ison2	ison3	con1	con2	con3	inov1	inov2
Open Market Structures	0,26	0,22	0,14	0,42	0,66	0,42	0,01	0,02	0,00	0,00	0,00
Isonomia of Political Institutions	0,00	0,00	0,00	0,23	0,36	0,23	0,00	0,01	0,00	0,00	0,00
Productive Connectivity Structures	0,00	0,00	0,00	0,01	0,02	0,01	0,11	0,44	0,01	0,00	0,00
Innovation Performance	0,00	0,00	0,00	0,66	1,03	0,66	0,54	2,26	0,06	0,04	0,27

Source: Own study.

5. Discussion

The preliminary stage before SEM, which is the CFA, finalized the placement of measurable variables under the latent causal influence of four factors, which stand as the representative indicators for each structural pillar of a 'national development system', paraphrasing the term national innovation system, namely entrepreneurial institutions, the governmental/fiscal parameter and the economic complexity in terms of productivity and innovation.

These four structural factors were not merely correlated with each other, with two-way causal connections, but the predictive chain of their interconnections was determined as a single system, producing a temporal causal order. SEM stage is the space for these pursuits, performing test combinations with reviews of the results,

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always satisfying the criterion of relevance with the theoretical and empirical models from the above literature review.

Open market structures have proven to be the source factor behind the type and quality of the evolutionary trajectory of the other three factors. The degree of openness of market institutions determines the course and direction of the whole structural development apparatus. It is interesting that market entrepreneurial structures precede the factor of political institutions of equality and equal opportunities, in terms of influential power exerted in the uniform system of economic development.

At the same time, however, the factor of political institutions proves to be of crucial importance, as it is the generative condition for increasing – or decreasing – the connectivity of productive structures and the efficiency of innovation. Interconnection of open market structures directly with innovation, as will be shown below, i.e. bypassing Isonomy, leads to opposite and undesirable results. In addition, connectivity and productive networking is a factor that contributes significantly to integrated innovation performance, as it acts as an additional and supportive arm, a complementary path to innovation.

Another important element of the model produced is that it places institutions and regulatory arrangements as preceding the economic results and performance, establishing their causal nature as foundations. This is in line with institutional theory and confirms the predictions from empirical findings. With these econometric results, the causal chain of institutional factors is added to the literature of development mechanisms, through a kind of static engineering, where, in a way, the foundations of the development edifice are open market structures, political institutions are static superstructure members, and the degree of connectivity of production units function as the platform for the respective level of evolutionary dynamics. Innovative performance emerges as a behavioral result from these initial and determinant factors.

Another interesting finding is the affinity of this model with models of economic geography, where the existence of active factors in a geographical area gives an economic footprint of the actions that result from them, such as a port, a factory or a market in a city that contribute to the construction of its road interconnection network.

In the event of an increase in the number and scope of these factors, transport networks become denser and the complexity of financial transactions increases. By shifting this model to the present research model, an identical logic emerges. As structural factors in the systemic framework are upgraded, the complexity of interactions between them increases and the economic result is enriched. Thus, the openness of market structures expands the scope and number of business initiatives, as well as equal opportunities opens the access for more citizens to economic events.

Correspondingly, the connectivity of productive actors intensifies the contacts for the exchange of knowledge. All these factors contribute to the increase of complexity of development mechanisms in a greater breadth and depth, resulting in greater innovative efficiency. For clarification, open entrepreneurship is identified with freedom, alluding to conditions of free mobility, choice and decision, the opposite to conditions of central planning, demarcation or targeting imposed from above. Drawing parallels from the field of chemistry, in this environment of "instability, far from equilibrium", there is emergence of productive structures in moments exceeding critical limits of complexity (Prigogine, 2008).

6.   Upgraded Version of the Model

Examining more carefully the model as it emerged, it is found that it is possible to link the structural factors in an alternative way; correlating some error terms variables with each other. A residual/error term indicates economic quantities that have not been determined in order to be measured, but where the area to which they semantically belong is delimited, since they accompany specific, known and measured factors. Returning to economic theory, it is possible to identify sequences between economic variables in order to justify the attempt to correlate them (Landis *et al.,* 2009; Hermida, 2015). From the model, four justified correlations should be made in order to increase the accuracy of the model.

Firstly, the ease of doing business score and government efficiency index fall within a common area of institutional arrangements. The remaining 29% of this entrepreneurship variance that cannot be predicted by OpenMarket, reflects a quantity that can be approached from a theoretical area related to government efficiency, since the structures of public goods and services are part of a common interpretation framework with public facilitation structures for entrepreneurship.

Respectively, the remaining 36% of the variance of connectivity that cannot be reproduced by the effect of Isonomia, has common reference with government efficiency, since government regulations are crucial in shaping, either directly or indirectly, the environment which favors cooperation of production units with each other, as well as participation of active citizens in any phase of the production process. Part of the variance of connectivity is also explained by the institutional arrangements regarding extroverted trade, since connectivity also concerns the international part of its scope. Finally, 28% of the innovation performance variance is directly related to the field of universities and their specialized relationship with hi-tech industry.

The application of the above findings to the pre-existing model takes the following form in figure 3, with the numbers shown on the diagram having the same semiology as before. The model fit checks are clearly improved, and from marginally satisfactory, which were characterized in the previous model, are transformed into sufficiently satisfactory, with the most important checks being the CFI at 0.96, the

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AGFI at 0.825 and the RMSEA at 0.095 (LO 90 at 0.76), followed by CMIN/DF at 2,63, NFI at 0.946 and TLI at 0.950.

Figure 3. *Revised path diagram using SEM, together with coefficient values of Standardized Regression Weight and Squared Multiple Correlation*
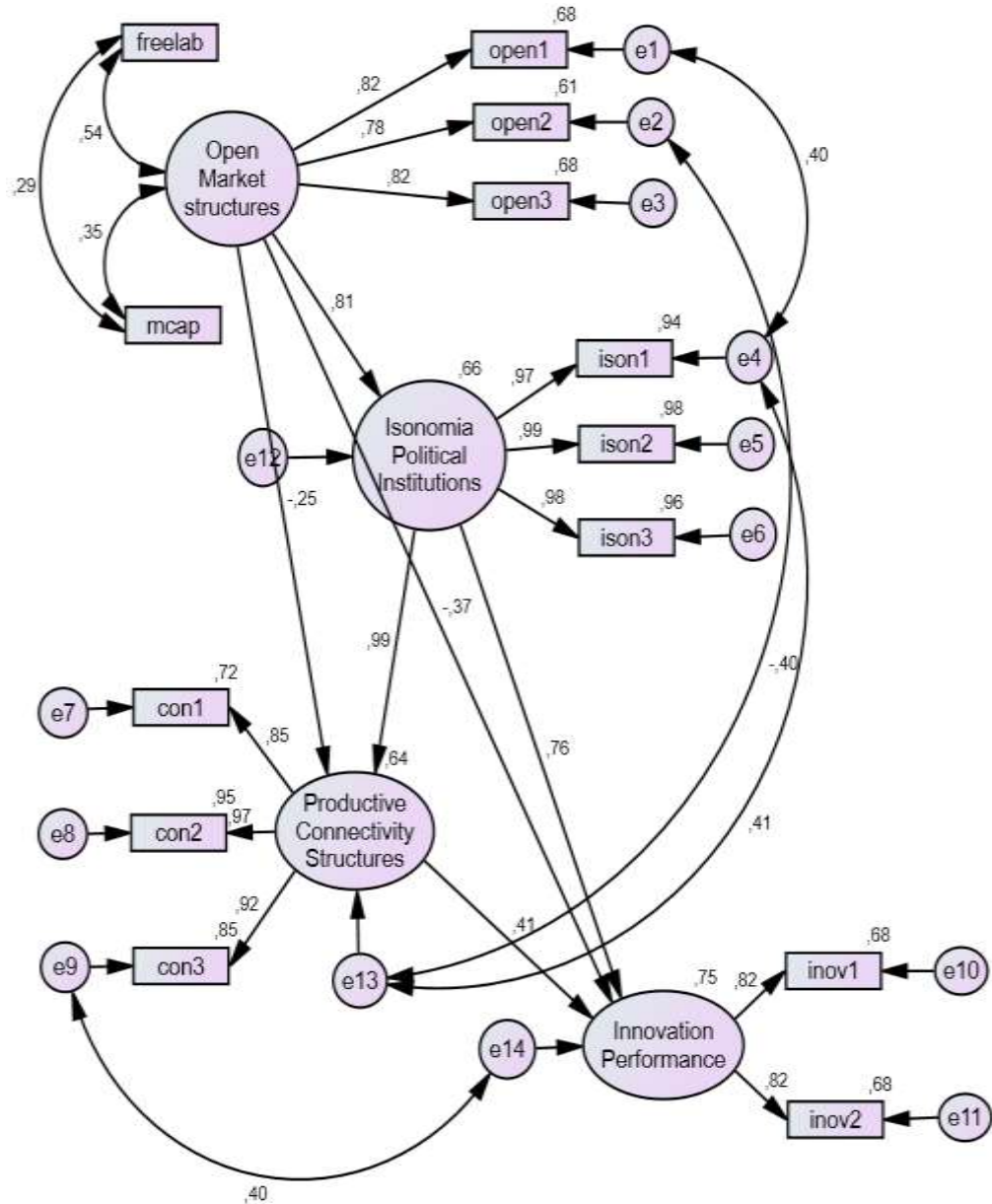
Source: Own study.

In the revised model of Figure 3, the correlations of residuals/errors mentioned were put into place, together with the remaining one-way causal links originating from the OpenMarket to the other factors. The model is now characterized as complete, as coefficients of prediction are given for all alternative routes to Innovation.

Thus, the direct links of open market structures to connectivity and innovation, presented as a negative sign effect, confirm the initial finding that Isonomia is a moderator and not a mediator, which means that Isonomia is a necessary condition in path to connectivity or innovation, and not just an intermediate station, which can be bypassed. In terms of institutional economics, open market structures are not capable enough for fertile conditions of creative disaster to prevail, without the existence of political institutions of equal eopportunities. All structural factors must act in coodrination as a single system to keep the economy on an upward trajectory.

Table 6. *Factor Score Weights for the calculation of country Rankings*

	open1	open2	open3	ison1	ison2	ison3	con1	con2	con3	inov1	inov2
Open Market Structures	0,255	0,25	0,124	-1,927	1,821	0,952	0,075	0,452	0,021	-0,002	-0,017
Isonomia of Political Institutions	-0,002	0,002	0,001	0,211	0,408	0,213	0	-0,001	0	0	0
Productive Connectivity Structures	-0,002	-0,005	0	0,13	-0,002	-0,001	0,086	0,518	0,008	0	0
Innovation Performance	-0,121	-0,091	-0,046	2,125	1,907	0,997	-0,087	-0,521	0,197	0,033	0,245

Source: *Own study.*

The above model can also be translated into fiscal policy terms, incarnating the priorities it is called upon to focus, in order to be faithful to the model. These are the four developmental structures from which a policy maker can reap the positive fruits, to the extent that she/he cultivates and strengthens them, in a context of mutual nourishment. The emphasis should be on achieving good performance across the range of institutions included in the Doing Business parameters, and by increasing the beneficial effects of isonomy and networking institutions, for multiplying effects in all four factors.

In this context, each development structure is a public platform from which knowledge, tacit or explicit, is organized and disseminated and thus each structure may fall under the responsibility of the respective ministry, with the role of coordination and cooperation of the productive units. With this fiscal policy conceptualization, the focus is on individual relations of the key ministries, for the production of knowledge, the stimulation of productivity and the reproduction of the

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conditions of creative change, with knowledge and forms of organization being the currency of exchange and not by means of redistribution of resources.

Table 7. *Standardized Direct, Indirect and Total Effects between factors and variables*

	Open Market Structures			Isonomia Political Institutions			Connectivity Structures			Innovation Performance		
	Direct	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*	*Direct*	*Indirect*	*Total*
Isonomia of Political Institutions	0,809	0	0,809	0	0	0	0	0	0	0	0	0
Productive Connectivity Structures	-0,246	0,799	0,554	0,988	0	0,988	0	0	0	0	0	0
Innovation Performance	-0,373	0,844	0,471	0,763	0,403	1,166	0,408	0	0,408	0	0	0
open1	0,824	0	0,824	0	0	0	0	0	0	0	0	0
open2	0,824	0	0,824	0	0	0	0	0	0	0	0	0
open3	0	0,387	0,387	0	0,96	0,96	0	0,336	0,336	0,823	0	0,823
ison1	0	0,387	0,387	0	0,96	0,96	0	0,336	0,336	0,823	0	0,823
ison2	0,784	0	0,784	0	0	0	0	0	0	0	0	0
ison3	0	0,509	0,509	0	0,908	0,908	0,92	0	0,92	0	0	0
con1	0	0,538	0,538	0	0,96	0,96	0,972	0	0,972	0	0	0
con2	0	0,469	0,469	0	0,837	0,837	0,847	0	0,847	0	0	0
con3	0	0,793	0,793	0,98	0	0,98	0	0	0	0	0	0
inov1	0	0,8	0,8	0,988	0	0,988	0	0	0	0	0	0
inov2	0	0,786	0,786	0,971	0	0,971	0	0	0	0	0	0

Source: Own study.

Looking at Table 7 the direct, indirect and cumulative impact of factors on innovation, and comparing them with the corresponding values of the previous model, it can be seen that although the effects of OpenMarket on Innovation and Connectivity seem to be of reduced regression weight compared to the previous model, the respective effects of Isonomia on Innovation and Connectivity are increased.

However, looking at the total effects of all three factors to Innovation and respectively to Connectivity and to Isonomia, equivalence of regression weights is observed between the two models, close to 2.00 for Innovation, close to 1.50 for Connectivity and 0,80 for Isonomia. Therefore, with the new model, Isonomia has stronger positive impact to the other two factors. In addition, there is a strong contribution of individual observable variables to innovation, such trade freedom and government efficiency at 0,82, as well as corruption at connectivity at 0,92.

Equally interesting is the strong positive effect of innovation variables on political institutions of isonomy and open market structures. This finding is also a proof of the reciprocal benefit of the innovative activities received from economic and political structures, back to the upgrading and re-promotion of the institutional structures themselves. Therefore, innovation itself is useful not to be considered solely as an output, but as part of the active poles of growth. Freedom of labor, the variable that indicates the flexibility of labor market, is an indicator of greater

correlation with open market structures and consequently with the whole development model than market capitalization, but the latter is of not negligible correlation.

With Table 8 it is possible to calculate the yield value for each of the four factors of the model, for all countries in the sample. Then, putting the results in order of decreasing value, each country's position for each factor ranking emerges. Grouping the countries can be attempted using K-means clustering method, so that the aggregate profiles and the kinship relations that emerge within each group can be derived (Table 9).

Finally, by applying a geographical constraint and focus on the European region, it is easier to assess the homogeneity of each grouping and make a judgment on the reliability of the model from the results it produces. With Table 10 it is therefore clear that the model grouped the European countries in a way that seems quite realistic and reasonable, having singled out countries according to their evolutionary dynamics and their institutional and structural background.

7. Conclusions for the Upgraded Version of the Model

The modern economic reality highlights the coupling of innovation with entrepreneurship as the predominant productive model of accelerating growth. The theory of institutional economics first introduced the concept of institutions and transaction costs and provided the means to access the fields where knowledge production initiatives originate, get diffused through the channels of companies and research units and ending up as innovative actions and visions, either via entrepreneurship or via civil society relating to local needs.

Empirical research has shown the strong correlation of individual factors that interactively contribute to growth impetus. The main building blocks on which growth is based have been identified, such as fiscal policy, open institutions, the production and dissemination of knowledge or the networked architecture of innovative enterprises. The current methodology offers the possibility of a holistic approach to development, putting the structural factors in direct correlation with each other.

The results demonstrate the crucial importance of open market structures, as the necessary starting point for cultivating an environment of increased productive connectivity and broad innovative initiatives. The degree of openness of the political institutions are also considered a necessary condition for the consolidation of the development trajectory, in terms of it being disseminated to the widest possible social base, together with the appropriate formation of the fiscal and governmental framework.

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The methodological approach therefore focuses on the generative conditions for growth momentum to be enhanced. The thirteen variables, systemically interconnected, are stations in an organizational structure of higher scale. They can act as levers for targeted fiscal intervention, in institutional areas of crucial role in shaping the productive environment. The model provides the axes with which one can interpret and predict the possible effects of any discrete regulatory intervention, on all nodes of the development network; the model can function, in a way, as a development policy manual.

Table 8. *Country Rankings for each factor*

Countries	Open Market St	Countries	Isonomia	Countries	Connectivity	Countries	Innovation
Hong Kong	1	Finland	1	Switzerland	1	Switzerland	1
New Zealand	2	Singapore	2	United States	2	Luxembourg	2
Singapore	3	Switzerland	3	Netherlands	3	Sweden	3
Denmark	4	Norway	4	Finland	4	Finland	4
United States	5	Sweden	5	Singapore	5	Japan	5
United Kingdom	6	Denmark	6	Luxembourg	6	Germany	6
Ireland	7	Luxembourg	7	Sweden	7	Austria	7
Norway	8	New Zealand	8	Germany	8	Korea, Rep.	8
Australia	9	Netherlands	9	Denmark	9	Netherlands	9
Switzerland	10	Hong Kong	10	Japan	10	Denmark	10
Canada	11	Canada	11	Hong Kong	11	Singapore	11
Finland	12	Austria	12	Norway	12	Israel	12
Sweden	13	Germany	13	Israel	13	Belgium	13
Iceland	14	Australia	14	Belgium	14	United States	14
U. Arab Emirates	15	Iceland	15	Austria	15	Norway	15
Estonia	16	United Kingdom	16	New Zealand	16	Canada	16
Netherlands	17	Japan	17	United Kingdom	17	France	17
Austria	18	Ireland	18	Ireland	18	Iceland	18
Germany	19	United States	19	Australia	19	Ireland	19
Georgia	20	France	20	Canada	20	United Kingdom	20
Lithuania	21	Belgium	21	U. Arab Emirates	21	New Zealand	21
Belgium	22	Estonia	22	Iceland	22	Australia	22
Latvia	23	Chile	23	Qatar	23	Hong Kong	23
Czech Republic	24	Portugal	24	France	24	Slovenia	24
Luxembourg	25	Korea, Rep.	25	India	25	Estonia	25
Qatar	26	U. Arab Emirates	26	Korea, Rep.	26	Malta	26
Japan	27	Slovenia	27	Indonesia	27	Czech Republic	27
Korea, Rep.	28	Israel	28	China	28	U. Arab Emirates	28
Slovenia	29	Malta	29	Estonia	29	Qatar	29
Spain	30	Czech Republic	30	Lithuania	30	Portugal	30
Israel	31	Spain	31	Czech Republic	31	India	31
Portugal	32	Lithuania	32	Philippines	32	Chile	32
Chile	33	Latvia	33	Malta	33	Lithuania	33
Poland	34	Cyprus	34	Slovenia	34	China	34
Romania	35	Qatar	35	Thailand	35	Spain	35
Slovak Republic	36	Poland	36	Azerbaijan	36	Cyprus	36
France	37	Botswana	37	Portugal	37	Italy	37
Thailand	38	Slovak Republic	38	Chile	38	Slovak Republic	38
Cyprus	39	Georgia	39	Slovak Republic	39	Indonesia	39
Hungary	40	Hungary	40	Cyprus	40	Latvia	40
Serbia	41	Croatia	41	Latvia	41	Philippines	41
Malta	42	Italy	42	Spain	42	Hungary	42
Botswana	43	Greece	43	Pakistan	43	Brazil	43
Croatia	44	Romania	44	Russian Fed.	44	Poland	44
Italy	45	India	45	Albania	45	Botswana	45
Mexico	46	Thailand	46	Poland	46	Pakistan	46
Azerbaijan	47	China	47	Botswana	47	Thailand	47
Russian Fed.	48	Serbia	48	Mexico	48	Greece	48
Moldova	49	Indonesia	49	Colombia	49	Albania	49
Ukraine	50	Turkey	50	Hungary	50	Azerbaijan	50
Turkey	51	Mongolia	51	Brazil	51	Colombia	51
Indonesia	52	Albania	52	Ukraine	52	Croatia	52
Albania	53	Colombia	53	Italy	53	Turkey	53
Greece	54	Philippines	54	Serbia	54	Georgia	54
Mongolia	55	Brazil	55	Turkey	55	Serbia	55
Colombia	56	Moldova	56	Georgia	56	Mongolia	56
China	57	Azerbaijan	57	Mongolia	57	Russian Fed.	57
Philippines	58	Mexico	58	Greece	58	Romania	58
India	59	Russian Fed.	59	Romania	59	Mexico	59
Brazil	60	Ukraine	60	Moldova	60	Ukraine	60
Pakistan	61	Pakistan	61	Croatia	61	Moldova	61

Source: *Own study.*

Table 9. *Institutional Profiles of countries and their grouping into six clusters*

Countries	Open Market St	Isonomia	Connectivity	Innovation	Cluster no
Finland	12	1	4	4	1
Germany	19	13	8	6	1
Japan	27	17	10	5	1
Luxembourg	25	7	6	2	1
Netherlands	17	9	3	9	1
Sweden	13	5	7	3	1
Switzerland	10	3	1	1	1
Australia	9	14	15	7	2
Austria	18	12	19	22	2
Belgium	22	21	14	13	2
Canada	11	11	20	16	2
Denmark	4	6	9	10	2
Hong Kong	1	10	11	23	2
Iceland	14	15	22	18	2
Ireland	7	18	18	19	2
New Zealand	2	8	16	21	2
Norway	8	4	12	15	2
Singapore	3	2	5	11	2
United Kingdom	6	16	17	20	2
USA	5	19	2	14	2
Chile	33	23	38	32	3
Czech Republic	24	30	31	27	3
Estonia	16	22	29	25	3
France	37	20	24	17	3
Israel	31	28	13	12	3
Korea, Rep.	28	25	26	8	3
Lithuania	21	32	30	33	3
Malta	42	29	33	26	3
Portugal	32	24	37	30	3
Qatar	26	35	23	29	3
Slovenia	29	27	34	24	3
U. Arab Emirates	15	26	21	28	3
China	57	47	28	34	4
India	59	45	25	31	4
Indonesia	52	49	27	39	4
Philippines	58	54	32	41	4
Botswana	43	37	47	45	5
Cyprus	39	34	40	36	5
Georgia	20	39	56	54	5
Hungary	40	40	50	42	5
Italy	45	42	53	37	5
Latvia	23	33	41	40	5
Poland	34	36	46	44	5
Slovak Republic	36	38	39	38	5
Spain	30	31	42	35	5
Thailand	38	46	35	47	5
Albania	53	52	45	49	6
Azerbaijan	47	57	36	50	6
Brazil	60	55	51	43	6
Colombia	56	53	49	51	6
Croatia	44	41	61	52	6
Greece	54	43	58	48	6
Mexico	46	58	48	59	6
Moldova	49	56	60	61	6
Mongolia	55	51	57	56	6
Pakistan	61	61	43	46	6
Romania	35	44	59	58	6
Russian Fed.	48	59	44	57	6
Serbia	41	48	54	55	6
Turkey	51	50	55	53	6
Ukraine	50	60	52	60	6

Source: *Own study.*

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Table 10. *Grouping of European countries into six clusters based on Factor Score Rankings*

Countries Europe	Open Market St	Isonomia	Connectivity	Innovation	Custer no
Finland	6	1	3	3	1
Germany	11	8	5	4	1
Netherlands	9	6	2	6	1
Sweden	7	4	4	2	1
Switzerland	5	2	1	1	1
Austria	10	7	9	5	2
Denmark	1	5	6	7	2
Norway	4	3	7	9	2
Ireland	3	10	11	11	2
United Kingdom	2	9	10	12	2
Belgium	13	12	8	8	3
France	22	11	12	10	3
Estonia	8	13	13	14	4
Latvia	14	19	20	22	4
Lithuania	12	18	14	17	4
Czech Rep.	15	16	15	15	4
Slovenia	16	15	16	13	4
Portugal	18	14	17	16	4
Spain	17	17	21	18	4
Hungary	24	23	23	23	5
Poland	19	21	22	24	5
Slovak Rep.	21	22	18	21	5
Italy	26	25	24	20	5
Cyprus	23	20	19	19	5
Croatia	25	24	27	26	6
Greece	27	26	25	25	6
Romania	20	27	26	27	6

Source: *Own study.*

Table 11. *Clusters' Classification*

CLUSTER 1 [ScandNorth]	CLUSTER 2 [ScandWest]	CLUSTER 3 [Central]	CLUSTER 4 [BalticIberia]	CLUSTER 5 [EastBlock+Cy]	CLUSTER 6 [SouthEast]
Finland	Austria	Belgium	Czech Rep.	Cyprus	Croatia
Germany	Denmark	France	Estonia	Hungary	Greece
Netherlands	Ireland		Latvia	Poland	Romania
Sweden	Norway		Lithuania	Slovak Rep.	
Switzerland	United Kingdom		Portugal	Italy	
			Slovenia		
			Spain		

Source: Own study.

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