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## THE CONTRIBUTION OF OPEN GOVERNMENT TO PROSPERITY OF SOCIETY

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Open government contributes to economic prosperity and democracy through active investment and civic participation. Our study investigated whether open government affects the social dimension of prosperity such as social capital and environment. Social capital measures assets of humanity such as trust and community's network, which determines the level of a community's success. Environment indicates the relationship between human and nature and thus relates to the wellbeing of the nation and satisfaction among the population. Using the structural equation model we find that the two variables are not directly, but significantly indirectly related through the mechanisms of Rule of Law and Control of Corruption. The role of Rule of Law and Control of Corruption are emphasized in this study, because of their significance in mediating open government and prosperity. Unless mechanisms like regulation formulation, law enforcement and control of corruption are not put into practice; open government itself will not be a driving force to a prosperous society.

*Keywords: open government; prosperity; social capital; environment; rule of law; control of corruption*

## LA CONTRIBUCIÓN DEL GOBIERNO ABIERTO A LA PROSPERIDAD DE LA SOCIEDAD

El gobierno abierto contribuye a la prosperidad económica y la democracia a través de la inversión activa y la participación cívica. El estudio investigó si el gobierno abierto afecta la dimensión social de la prosperidad como el capital social y el medio ambiente. El capital social mide los bienes de la humanidad como la confianza y la red de sociedad, lo que determina el nivel de éxito de una sociedad. El medio ambiente indica la relación entre el ser humano y la naturaleza y por lo tanto se relaciona con el bienestar de la nación y la satisfacción entre la población. Usando el structural equation model encontramos que las dos variables no están directa, sino significativamente indirectamente relacionadas a través de los mecanismos del Rule of Law y Control of corruption.Los dos están articulados, debido a su importancia en la mediación del gobierno abierto y la prosperidad. A menos que no se pongan en práctica mecanismos como la formulación de la reglamentación, la aplicación de Rule of Law y Control of corruption; el gobierno abierto no será una fuerza motriz para una sociedad próspera.

*Palabras clave: govierno abierto; prosperidad; capital social; medio ambiente; rule of law; control of corruption*

## 1. Introduction

Open government and transparency have been subjects under intense interest throughout society and academics. Empirical studies on the effect of open government to society such as economic welfare and governance exists, however the lack of empirical study of open government on social wellbeing such as social capital or environment has caught our attention. This study attempts to bring other measurement of prosperity into question that should be affected by open government. Rivera et al. (2018) suggest parameters other than economic welfare apply to prosperity for the people in rural areas, because to them economic efficiency does not necessarily contribute to economic growth at regional level.

Open government initiatives such as Access to Information Law in China and India (Relly & Sabharwal, 2009), the launch of Open Government Partnership in 2011 under the Obama administration and the creation of the Latin-American network (Red Latinoamerica por la Transparencia Legislativa) in 2012 foster transparency of information to public thereby gaining their interest and participation to straighten social and political issues, such as detecting corruption or strengthening regulation formulation. These initiatives imply that open government brings much more than economic welfare; it also enhances the wellbeing of a society and other prosperity aspects.

Against the limitations of previous studies, mentioned in the next chapter, this study used the prosperity index from the Legatum Prosperity Institution to discover two main points: first to investigate whether open government has a positive and direct effect on social welfare, in particular social capital and environment and second whether mechanisms such as Rule of Law and Control of Corruption play a vital role in bridging the two variables.

## 2. Open government

Meijer, Curtin, and Hillebrandt (2012, pp.13) define openness of government as "the extent to which citizens can monitor and influence government processes through access to government information and access to decision-making arenas". Heckmann (2011 pp.1) states that "Open Government is about improving transparency and thereby accountability in all public affairs" and thus can improve the opportunities of citizens to influence political decisions. Information is the key ingredient for civic participation and information dissemination is the transparency where a government or other political institution informs about its actions and processes in order to accurately inform the citizen about what such an institution is doing (Bellver & Kaufmann, 2005; Calland & Bentley, 2010; Kolstad & Wiig, 2009; Kopits & Craig, 1998; Lindstedt & Naurin, 2010; Relly & Sabharwal, 2009). The active engagement of citizens can bring public trust, decrease disillusionment with politics (Heckmann, 2011) and improve the implementation and outcome of policies (McDermott, 2010). The contribution of individuals, will "refine feedback for policy learning, stimulate diverse approaches to problem solving, and bring human and other resources to bear key challenges" (Noveck, 2015 pp.158).

Many researches have been done on open government in relation to economic development, technology, especially ICT and politics. Economic development is probably the most basic for improving the standard of living in a country. The transparency of data, which is referred to fiscal transparency in technical terms, allows economic and political decision makers to monitor and evaluate opportunities and risks and enhance possibilities of decisions that will have good effect on economic and social welfare (Islam, 2006). The information created by open government data uses technological infrastructure to enable the information flow to the public. By taking advantage of information dissemination citizens can influence political decision, detect corruption and thus enhance government accountability (McGee & Gaventa, 2011; Michener & Bersch, 2013). Not only do citizens receive data, but express opinions and exchange ideas by using ICT (Information and communication technology) and public blogs, which has made information dissemination and communication easier between the government and the public (Bertot et al,. 2010; Chen et al., 2009; Relly & Sabharwal, 2009; Krishnan et al., 2013; Murillo 2015). In the studies above open government is essential regarding political engagements: democracy, public participation, optimal decision-making and prevention of corruption (Banerjee & Chau, 2004; Cho & Choi, 2004; Elbahnasawy, 2014; Eschenfelder,  2004; Obama, 2009; Rosendorff & Vreeland, 2006; Von Haldenwang, 2004; Wong & Welch, 2004), however open government by itself is not enough (Lindstedt & Naurin, 2010).

**2.1 Open government, Rule of Law and Control of Corruption**

For a well-functioning open government culture specific conditions are needed. Lindstedt & Naurin (2010) find that the public conditions such as high education and media reach are necessary for open government to have positive effect on the public. Krishnan et al. (2013) proved that the mechanism of Control of Corruption fully mediated the e-government maturity on economic prosperity. This study investigates whether Rule of Law and Control of Corruption work as a platform between open government and prosperity of society. The two variables measure the confidence level of the public; confidence on the perception of social order. Rule of Law measures the perceptions on agents' willingness to abide by the rules of society, police and courts and the law enforcement of contracts and property rights and detection of crime and violence. Control of Corruption considers public power detecting malpractices for private gains. It also captures the state of private interests and the state by elites (Kaufmann et al. 2011).

**2.2 Open government, social capital and environment**

Social capital is closely associated with trust and network and has substantial effects beyond those of economic characteristic (Helliwell, 2006); it is an important indicator of a community's success (Whitham, 2012). If social network and trust is high it creates an amusing atmosphere thus increasing the wellbeing of the citizens (Helliwell, 2006). Moreover, Paxton (2002) in her research finds that social capital and democracy are interdependently related, meaning that social capital affects democracy and vice versa. In this study we refer the term to the synergy of human capital that comes into effect when a community can trust one another. Just like social capital environment and nature has been considered as an intangible benefit to the people, that enhances their happiness and health. For example, high air

quality, ecotourism, agriculture and nature conservation brings physical and social benefits to the community, which is indirectly linked to the happiness of the people. Krishnan et al. (2013) had proven that e-government maturity has indirect effects on environmental degradation via Control of Corruption. The idea to include environment into the social dimension of prosperity has been brought to attention only recently. Both social capital and environment are intangible benefits that correspond to the social aspects of prosperity.

## 2.3 Open government and rural prosperity

Measurements on rural prosperity has not been created nor any researches done on the relationship between open government and rural prosperity. However, researches have been done to define the term rural prosperity. It turns out that the term embraces much more social and cultural aspects than has been defined up until now. Rivera et al. (2018) and Rios et al. (2016) state that it is important to understand the specific context in which the individual is involved. Individuals in the rural areas value for example beautiful landscapes or diverse activities, which allows ecological agriculture to obtain natural and health food as an important source of income than do individuals in urban areas. These activities require diversity of actions and knowledge sources, where these can be achieved through social learning of a community. The social learning process creates an atmosphere of belonging, participating and working together and thus fulfills the needs of the people involved, which are also parts of the objectives of open government.

## 3. Research objectives

As we have seen from the previous literature open government is related to access to information, technology, civic participation, politics and economic welfare. This study measures whether open government has an effect on prosperity; not only on economic welfare but also on social welfare such as social capital and environment. We use the Open Government Index from the World Justice Project, which measures the publicized laws and government data, right to information, civic participation and complaint mechanism as our independent variable. The Prosperity Index, taken from the Legatum Prosperity Index, is our dependent variable and considers three dimensions - economic, social and political - and is measured in nine pillars: economic quality, business environment, governance, personal freedom, environment, education, social capital, safety & security and health. We will see whether publicized data, citizen's right to the information and their engagement or interaction have effect on the flourishment and wealth creation of society.

### 3.1 Research questions

The research question is as follows:

1.      Is open government directly associated with prosperity?

2.      Is open government associated with prosperity through the two mediating effects: Rule of Law and Control of Corruption?

## 3.2 Research model

This research has two research models. The first model is to investigate government transparency of 96 countries[1] for the year 2015 by using Open Government Indicators as the independent variable. The second model is to investigate the effect of E-government development index from the United Nations to prosperity for eight consecutive years from 2008 to 2015 in the96 countries. Both models will measure a direct effect of open government toward prosperity and an indirect effect through two mediating variables: the Rule of Law and Control of Corruption.

**Figure 1. Research model**

The model used in this paper is shown below. Figure 1 shows the overall research model for the paper. We will be measuring i) the direct effect of open government to prosperity and ii) the indirect effect of the open government to prosperity through two
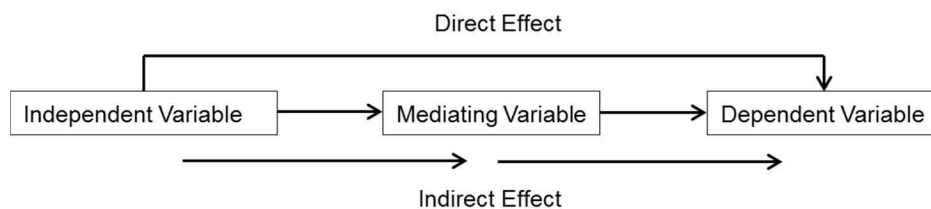


mediating variables.Figure 2 shows the direct effect of the four Open Government Index to the nine prosperity indicators and Figure 3 shows the indirect effect through the mediating variables: Rule of law and Control of corruption. Figure 4 shows the model when using the E-government development index as the independent variable.

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[1] Countries measured in this study are Afghanistan, Albania, Argentina, Australia, Austria, Bangladesh, Belarus, Belgium, Belize, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Ivory Coast, Croatia, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Georgia, Germany, Ghana, Greece, Guatemala, Honduras, Hungary, India, Indonesia, Iran, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Lebanon, Liberia, Macedonia, Madagascar, Malawi, Malaysia, Mexico, Moldova, Mongolia, Morocco, Nepal, Netherland, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russia, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Thailand, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe.

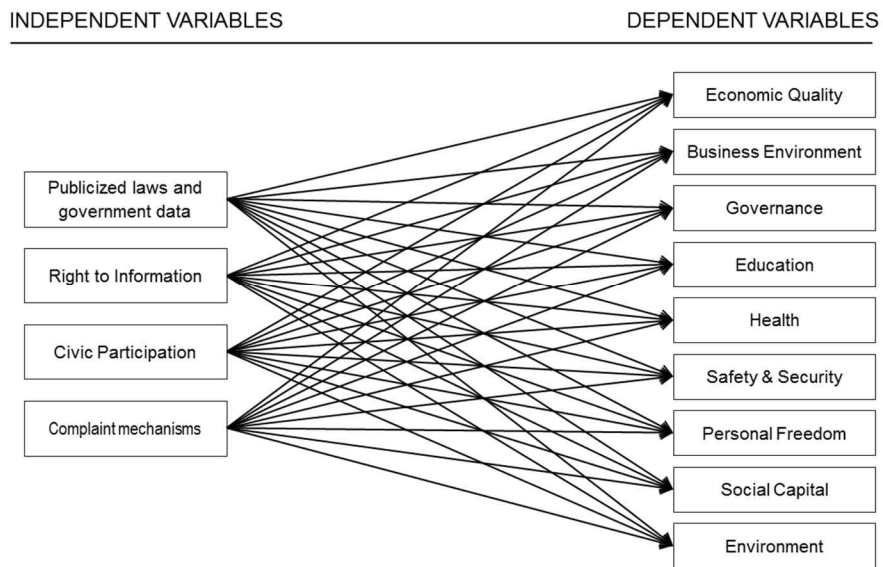**Figure 2. The relationship of open government to prosperity**



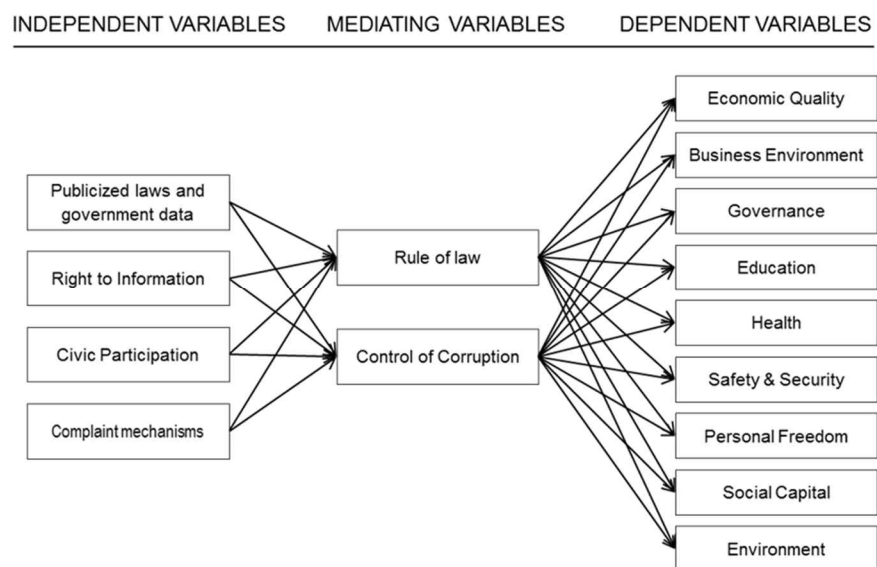**Figure 3. The relationship between open government and prosperity through Rule of Law and Control of Corruption**
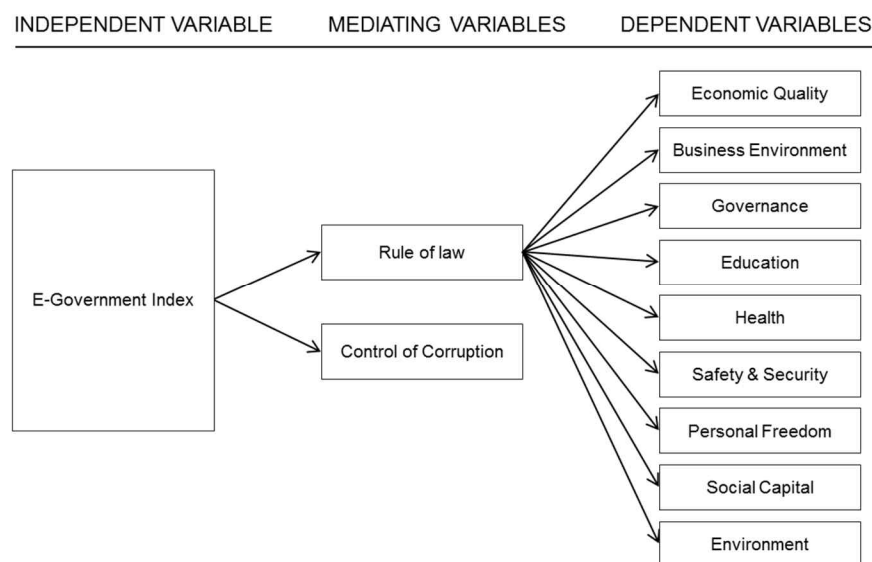
**Figure 4. The relationship of E-government index to prosperity through
the Rule of Law and Control of Corruption**



### 3.3 Hypothesis formulation

Relating open government to prosperity

Open government secures the citizens' right to information and thus improves accountability of disclosed information. Information itself enables citizens to formulate preferences among policy options, agencies to administer laws and regulations, and government to engage in "the mechanisms of accountability that freshen democracy" (Bimber, 2003, p. 11). Therefore, open government encourages civic engagement and participation in decision making (Meijer et al., 2012). Governmental institutions can post problems and expect for innovative ideas and solutions from citizens. These have proven to be highly beneficial (Haefliger et al. 2011). Therefore our first hypothesis is as follows:

*Hypothesis 1. Open Government is positively related to prosperity.*

Relating open government to prosperity through the mediating effect of Rule of Law and Control of corruption

Krishnan et al. (2013) has proven that the Control of corruption is an effective mechanism when talking about the relationship of e-government maturity and economic prosperity and environment degradation. Among many researches that confirm open government to be positively related to economic wealth and business quality Lindstedt and Naurin (2010) state that transparency of information is not enough. Wijnhoven et al. (2015) also agrees with the idea and emphasizes on the

importance to understand participation motivation of the people in order to fulfill the aim of open government. Given these statements we conclude that mechanisms such as the Rule of Law and Control of Corruption work as a catalyst (canal) through which open government data is useful to the public. Therefore our second hypothesis is as follows:

*Hypothesis 2. Open Government is positively related to prosperity with the mediating effect of Rule of law and Control of corruption.*

Relating open government to social capital and environment.

High income is often associated with economic prosperity. Economic prosperity can be linked to social wellbeing in that it corresponds to the overall life satisfaction of individuals. Citizens of high level income abide by rules and laws and enjoy economic prosperity, which is positively related to health and financial development (Bittencourt, 2011; Thomas & Frankenberg, 2002). This research investigated whether other than economics social welfare is benefited from open government. We assume that high social trust in the community will lead to a better life of individuals and increase the confidence level of satisfaction. Clearly due to the difference in economic and political development, countries will differ in the level of social capital as well. Our third hypothesis is as follows:

*Hypothesis 3. Social capital and environment are positively related to open government*

## 4. Data description and method

We gathered archival data from the World Justice Project, Worldwide Governance Indicators and Legatum Prosperity. The data have been used in numerous studies and it also provides other advantages such as easy reproducibility, ability to generalize the results arising from large datasets (Kiecolt & Nathan 1985) and robust to the threat of common method bias (Woszczynskia & Whitman 2004).

For the independent variable we used the Open Government Index[2] from the World Justice Project (WJP). The data for the two mediating variables are indicators from the Worldwide Governance Indicators[3]: Rule of law and Control of corruption. The Worldwide Governance Indicator is a project from the World Bank Development Research Group. Finally, the dependent variable will be taken from the Legatum

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[2] The Open Government Index scores are referred to the General Population Poll (GPP) and Qualified Respondent's Questionnaires (QRQs). The GPP survey is firsthand information of randomly selected people in each of the 102 countries asking their perceptions and experiences regarding their access to government information, participation in local government, the quality provided to them to make complaints, whether they have access to agency budget without payment or whether communities can gather and speak up their opinion to congressional officers. The Qualified Respondents' Questionnaires (QRQs), a polling data from 2,500 surveys from 23 experts from directories of law firms, universities, and research organizations including non-governmental organizations in civil and commercial law, criminal law, labor law, and public health, respond to closed-ended perception questions and several hypothetical scenarios. Completed surveys were mapped across the four dimensions and codified so that they fall between 0 and 1. Both the GPP and QRQs were equally computed and in cases where one data source is better suited to the measurement of a certain concept it was adjusted.

[3] The Worldwide Governance Indicator is a measurement of various data sources combined defining corruption among public officials, public trust in politicians and diversion of public funds. They are measured between -2.5 to 2.5 with the higher values corresponding to higher rules of laws and better control of corruption.

Prosperity Index[4], which is an international thinktank and educational charity and has the opinion that prosperity is the fundamental of human flourish. Detail description of the variables are shown in table 1-3.

**Table 1. Measurement of independent variables**

| Measurement | Definition | Data source |
|---|---|---|
| Publicized laws and government data | o laws and information on legal rights are publicly available<br>o quality and accessibility of information published by the government in print & online<br>o administrative regulations, drafts of legislation, administrative decisions, high court decisions are made accessible to public | World Justice Project |
| Right to information | o requests for information (budget figures of government officials, ombudsman report and information relative to community projects) held by a government agency are granted within a reasonable time period<br>o if information is pertinent and complete and<br>o if requests for information are granted at reasonable cost. awareness of people are aware of their right to information | |
| Civic participation | o the effectiveness of civic participation mechanisms, including the protection of the freedoms of opinion and expression<br>o whether people can voice concerns to various government officers and members of the legislature<br>o whether government officials provide sufficient information and notice about decisions affecting the community, including opportunities for citizen feedback | |
| Complaint mechanism | o Ability of people to bring specific complaints to the government about the provision of public services or the performance of government officers and how government officials respond to such complaints<br>o whether people can challenge government decisions before another government agency or a judge | |
| E-government development index | o Online Service Index (OSI): assessment of the country's e-services and e-participation portal and ministries of education, labor, social services, health, finance and environment.<br>o Telecommunication Infrastructure Index (TII): arithmetic average of (per 100 inhabitants) estimated internet users, fixed telephone lines, mobile subscribers and fixed | United Nations |

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[4] The Legatum Prosperity Index measures wealth and social wellbeing across nine pillars that is categorized by 104 variables consulted by experts, who reviewed 200 literature review from international organizations such as United Nations, World Bank, International Monetary Fund and World Health Organization and non-governmental organizations such as Amnesty International, Transparency International The value ranges between 1 and 100, the higher value corresponding to higher wealth and social wellbeing.

The E-government Development Index weighs the average of normalized scores of Online Service Index (OSI), Telecommunication Infrastructure Index (TII) and Human Capital Index (HCI). Each index has its own definitions that make up the E-government index.

broadband subscribers.
- o Human Capital Index (HCI): weighted average of adult literacy, gross enrollment ratio, expected years of schooling and average years of schooling.

**Table 2. Measurement of mediating variables**

| Measurement | Definition | Data source |
|---|---|---|
| Rule of law | Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. | Worldwide Governance Indicators from the World Bank Development Research Group |
| Control of Corruption | Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. | |

**Table 3. Measurement of dependent variables**

| Measurement | Definition | Data source |
|---|---|---|
| Prosperity | measuring, understanding and explaining from poverty to prosperity for individuals, communities and nations, which is considered as human flourishing with the opportunity of individual to discover, fulfil and share their potential | The Legatum Prosperity Institute |

For the first model, using data for year 2015, we used STATA program for an empirical analysis of Structural Equation Model by specifying the dependent variable, the independent variable and the mediating variable. As shown in Figure 1 we have one meditating variable, our estimation model consists of the following two equations: 1. the independent variable → the dependent variable, and 2. the independent variable → the mediating variable → the dependent variable.
For 1, the equation is

$$(1)\ Y = \alpha_1 + \beta_1 * X$$

where Y is the dependent variable (prosperity), X is the independent variable (open government), $\alpha_1$ the intercept and $\beta_1$ the coefficient. The second equation consists of three equations.

$$(2)\ M = \alpha_2 + \beta_2 * X$$

$$(3)\ Y = \alpha_3 + \beta_3 * M$$

where M is the expected value of Rule of law / Control of corruption and all other variables correspond to the above description. After the estimation, we used STATA command to obtain the goodness-of-fit statistics $R^2$.

## 5. Results

We conducted the Structural Equation Modeling (SEM) analysis with the two models as SEM can simultaneously analyze all paths in one analysis. All values are highly significant at the 1%

level. The significance level is indicated by the p-level; if the p-level is under 10% the coefficient is starred with *, if under 5% with ** and if under 1% with *** meaning that it has very high significance. Tables 4 show the direct and indirect correlations of each of the four Open Government Index to each of the nine prosperity indexes. Tables 6 show the direct and indirect correlation of the E-government development index to each of the nine prosperity pillars.

From the numerous results we have obtained, our attention was drawn on the indirect effects of open government. In both tables 4 and 5, we observe that all nine variables of prosperity show a significant and positive indirect effect via Rule of Law and Control of Corruption. Therefore, hypothesis 1 is rejected and hypothesis 2 supported. Open government showed significance and positive relation when introducing the mediating variable: Rule of Law and Control of Corruption. Statistical results show that social capital is not a significant or positive factor in any case of the four pillars of Open Government Index or E-government development index. (Tables 4 and tables 5). Environment does not show significant levels toward open government, however, shows significant relation toward e-government (Table 5-1 and table 5-2). Hypothesis 3 is partially accepted, because of the insignificant relation between open government and social capital and significant relation between e-government and environment.

### Table 4. The relationship between Open Government and Prosperity for 96 countries in year 2015

#### 4-1. Independent Variable = Publicized law and government data; Mediating Variable = Rule of Law

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 6.96*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 4.70*** | 6.55*** | 13.66*** | 4.03*** | 2.50*** | 6.32*** | 11.93*** | 4.75*** | 5.32*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

#### 4-2. Independent Variable = Right to information; Mediating Variable = Rule of Law

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 6.83*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 6.18*** | 6.72*** | 12.09*** | 4.99*** | 4.10*** | 8.86*** | 6.36*** | 5.60*** | 4.75*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.002) | (0.000) | (0.000) |

#### 4-3. Independent Variable = Civic participation; Mediating Variable = Rule of Law

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 4.40*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 8.65*** | 7.88*** | 11.34*** | 12.35*** | 7.41*** | 8.9*** | 5.34*** | 3.85*** | 5.23*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

### 4-4. Independent Variable = Complaint mechanisms; Mediating Variable = Rule of Law

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 5.52*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 7.21*** | 6.75*** | 11.20*** | 8.46*** | 5.07*** | 9.58*** | 3.51* | 4.04*** | 3.87*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.059) | (0.000) | (0.000) |

### 4-5. Independent Variable = Publicized law & government data, Mediating Variable = Control of Corruption

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 7.09*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 3.89*** | 5.75*** | 13.47*** | 2.46* | 2.34*** | 5.82*** | 12.42*** | 4.71*** | 5.36*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.100) | (0.016) | (0.000) | (0.000) | (0.000) | (0.000) |

### 4-6. Independent Variable = Right to information; Mediating Variable = Control of Corruption

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 6.78*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 5.33*** | 5.84*** | 11.49*** | 3.84*** | 3.93*** | 8.05*** | 6.75*** | 5.28*** | 4.63*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.006) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

### 4-7. Independent Variable = Civic participation; Mediating Variable = Control of Corruption

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 4.38*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 7.95*** | 7.24*** | 11.01*** | 11.15*** | 7.11*** | 8.38*** | 5.67*** | 3.76*** | 5.13*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

### 4-8. Independent Variable = Complaint mechanisms; Mediating Variable = Control of Corruption

|  | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. |  |  |  |  | 5.56*** |  |  |  |  |
| p-value |  |  |  |  | (0.000) |  |  |  |  |
| M.V.→D.V. | 6.43*** | 5.98*** | 10.86*** | 7.08*** | 4.90*** | 8.98*** | 3.95** | 3.94*** | 3.85*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.029) | (0.000) | (0.000) |

**Table 5. The relationship between E-government and prosperity for
96 countries in year 2008-2015**

**5-1. Independent Variable = E-government index; Mediating Variable = Rule of Law**

| | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→M.V. | | | | | 4.09*** | | | | |
| p-value | | | | | (0.000) | | | | |
| M.V.→D.V. | 4.42*** | 6.02*** | 14.36*** | 1.06*** | 1.03*** | 6.44*** | 9.62*** | 4.97*** | 3.04*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

**5-2. Independent Variable = E-government index; Mediating Variable = Control of Corruption**

| | Economic Quality | Business Environ. | Governance | Educ. | Health | Safety & security | Personal freedom | Social Capital | Environ. |
|---|---|---|---|---|---|---|---|---|---|
| I.V.→D.V. | | | | | 4.1*** | | | | |
| p-value | | | | | (0.000) | | | | |
| I.V.→M.V. | 3.83*** | 5.66*** | 13.44*** | 0.52* | 1.18*** | 5.65*** | 9.8*** | 4.95*** | 3.74*** |
| p-value | (0.000) | (0.000) | (0.000) | (0.084) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |

## 6. Discussion and conclusion

After having shown that open government and transparency is a topic of interest the empirical findings show attention-seeking conclusions and discussions. First, open government (and e-government in the second model) is related to prosperity through the mediating effects of Rule of Law and Control of Corruption. As long as there is no effort in building or sustaining the mechanisms of Rule of Law and Control of Corruption, open government will not have full impact on prosperity. In other words law enforcement and regulations to protect citizens and maintain social order, citizens' right-to-know and the control towers of society are means of letting information flow into society. It functions as a virtuous circle of a prosperous society. Surely, the level of the two mechanisms in each country will differ much due to economic, cultural and technological differences.

Second, this empirical study shows that open government has an impact not only on community's economic welfare but also social welfare. If prosperity is not only about measuring economic welfare, but should consider measuring the social wellbeing, social capital and environment, in particular should be considered as a measurement for prosperity. Prosperity is a general definition of the wellbeing of a society. In future studies the term should be considered and defined in a narrower and more specialized context. For example, as mentioned above rural prosperity may be measured differently than in a context where manufacturing and other industry is more dominant. In rural areas social cohesion and engagement achieved through community network and trust that may bring about socio-economic opportunities to the region is more important than fiscal transparency and ICT in urban areas. Further study on the measurement of people's perception toward environment surrounding them and how they define prosperity is needed in connection with open government for future scientific studies.

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