



## Good governance and digitalization in Morocco: State of the art

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**Abstract:** *New technologies and the modernization of public services tend to change the relationship with citizens, businesses, and industry, posing new challenges in terms of how the governance system should function in a way that meets the needs of users and global development issues. According to the World Bank, good governance has two roles: the economic role of the government in implementing policy reforms and the non-economic role, such as transparency, accountability, efficiency, etc. In this paper, we will examine the relationship between digitalization and good governance in the Moroccan context based on descriptive analysis; after presenting a literature review of previous studies conducted. Our empirical study uses a dataset covering the period (2000-2019). Our dependent variables represent global governance indicators namely: voice, accountability and civic engagement, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. On the other hand, our independent variables are: internet users, mobile cellular subscriptions, and fixed telephone subscriptions. Our results show that good governance is struggling to find an upward slope in Morocco, despite all the technological advances that have been made.*

**Key Words:** Digitalization, Good governance, Efficiency, Regulation, Morocco.

## 1. INTRODUCTION

Digitalization - the increasing use of digital technology - is one of the major trends in modern society, with a massive impact on how we live and work (World Economic Forum, 2018). The digital has conquered all the workspaces, in administration, health care, education, etc... Although the "digital" transformation of the world has been triggered, already several years ago, with more or less mitigated advances in the countries, the crisis of the COVID-19 seems to accelerate the process and especially open the way to deeper economic and societal transformations. It is worth noting in the passage, the wide use of e-commerce, teleworking, and dematerialization of administrative procedures and acts during the crisis period. More than just an advance in the development cycle of NTICs, the Digital era, which is described as the fourth industrial revolution, is characterized by an upheaval in production and consumption patterns. Morocco is not an exception in this sense, and the country has already made the strategic choice, for several years, to join the project of the "Digital nation".

The relationship between digitalization and good governance has been the subject of several theoretical and empirical studies in different low- and high-tech countries. These researches have presented mitigated results depending on the study contexts and their governance structure. Bannister and Conolly (2011) find that in the digital age, the scope and nature of transparency need to be carefully managed, and expectations about the benefits of transparency enabled by ICT (Information and Communication Technology) may be too high. They suggest that enthusiasm for the potential of digitalization in governance should be tempered, as there is no evidence that it can transform governance into a better form. While its contribution is undeniable, its actual impact varies. For example, digitalization brings substantial benefits to transparency, but not to accountability.

Assessing good governance at the level of a country means analyzing the indicators that allow us to assess its main manifestations, the structure and institutional arrangements in place, and the implementation processes. The purpose of this paper is to study the specificities of the link between digitalization and good governance in Morocco.

## 2. ADVANCES IN DIGITALIZATION IN MOROCCO

Morocco has experienced, during the last decade, the establishment of national programs (e-Maroc 2010, Maroc Numeric 2013, Maroc Digital 2020) that have triggered an important dynamic in the introduction of digital. In 2007, *l'Agence pour le Développement du Digital (ADD)*, was established with the mission of creating the ecosystem and conditions for promoting the digitalization process. To address the deficits that persist in this area, Morocco has now adopted a new strategic vision that aims to ensure the integrated development of digital, both socially and

economically, by 2025. To guarantee the desired entry of the country into the digital era, the vision has set three challenges:

- Improving the quality of interactions between users and administrations (Smart Government) through, among other things, the development of digital public services. The objective is to reduce the dissatisfaction rate of users, whether citizens or companies.
- The creation of a digital ecosystem that promotes innovation in the digital sector and the competitiveness of companies, especially SMEs, self-employed, and startups. The objective is to establish Morocco as a digital and technological hub in the African zone.
- Social inclusion and reduction of social inequalities, through easier access to health services, education, and social benefits. The objective is to make digital a key tool for improving the quality of life of citizens.

On the legal aspect, Morocco has adopted a law (Law 55-19) that makes digital the main tool for simplifying administrative formalities and procedures. To give a serious boost to the digitalization process, the law has given administrations five years to digitalize the procedures related to some of their administrative actions. In terms of logistical aspects, and despite the deficits still observed, Morocco has a fairly advanced infrastructure that ensures a connectivity rate of 69%, placing it in 3rd place among the most connected African countries. The country currently has a Telecommunications Infrastructure Index (TII) of 0.58, compared to 0.36 in 2018.

On the operational level, Morocco has several electronic platforms currently. We can cite in this sense, the national window of foreign trade procedures "PortNet", having allowed the simplification and dematerialization of more than 70 documents, the platform "Chikaya" for receiving grievances from citizens, and more recently the platform "Liqahcorona", for making appointments and monitoring the operation of vaccination against the Covid19. The ADD is also working on other electronic platforms, five of which have a priority character, in connection with the three strategic issues already mentioned. In addition to the national platforms, various public institutions have seized the opportunity that digitalization can offer to integrate it into the production processes of public service, such as the "Smart" service of the foreign exchange office created in March 2020. It should be noted that Morocco has gained 4 places in 2020 in the United Nations e-government development index (EDGI).

Despite the progress that has been made, some obstacles remain, these latter are, for the most part, the reason for the new strategy for the development of digitalization by 2025. In the strategic direction note approved by the ADD, these main challenges include:

- The lack of an integrated vision of digital transformation,
- Regulatory restrictions that do not allow for the effective implementation and widespread use of digital platforms,

- The deficits of the digital infrastructure are related to the level of territorial covering, the weak data flow, and the weak use of data centers,
- The shortage of specialized profiles in digital professions,
- A digital culture that has yet to be developed among citizens, businesses, and public administrations,
- A system of governance that has not allowed for effective management of the implementation of digital programs.

The new strategy provides for measures to overcome these obstacles, including the establishment of the necessary infrastructure, the popularization of the digital culture, and a training program for new trades in the field. It seems to us that the process of digitalization subjects the country to challenges related mainly to the gaps observed at the level of governance, and that may slow down or at least limit the possibilities of taking full advantage of the opportunities offered by the digital.

### **3. GOOD GOVERNANCE: THE CURRENT SITUATION IN MOROCCO**

It is now widely accepted that good governance covers a range of issues including transparency, responsibility, accountability, participation, access to information, and public sector effectiveness and efficiency. The objective is to build institutions capable of responding to the needs of the population in terms of access to a range of services (health, education, housing, justice, etc.), and in terms of respect for human rights, be they civil, economic, social, political or other rights. For our part, and concerning the definitions and debates surrounding this notion, we would say that to talk about good governance is to talk about principles, institutions, and processes. The principles are those mentioned above and which, in our opinion, represent the results and manifestations of good governance. Moreover, most indicators of good governance are defined with these principles. The role of institutions also seems to us to be important in this area. It should be remembered that at the end of the 1980s, the World Bank linked the failure of structural adjustment policies to a lack of institutional capacity, thus orienting its programs towards what it called "good governance", which is defined as "the capacity of the government to provide institutions that promote growth and poverty reduction". Processes refer to all the mechanisms implemented to promote and support the implementation of good governance, whether they are legal, logistical, or other.

For its part, Morocco is among the countries that have adhered to the principles of good governance through a range of actions and reforms. The most important of these reforms, which we believe is the cornerstone of good governance in Morocco, was the 2011 constitutional reform. The newly adopted constitution provides a framework that defines the constitutional foundations and general mechanisms for good governance in the country. In addition to establishing and confirming the separation of powers, the 2011 constitution institutionalized the rule of law, emphasizing the principle of equality before the law and the commitment of all individuals and public authorities to comply with it. The latter is also required to

provide the conditions for the implementation of freedom and equality of citizens, their participation in public life, and consider the constitutionalization and dissemination of legal rules as binding principles. The 2011 constitution also emphasized the anchoring of citizen and participatory democracy, through the guarantee of free and transparent elections, and the commitment of public authorities to observe neutrality and non-discrimination between candidates. The 2011 Constitution also institutionalized the correlation between responsibility and accountability, and decentralization as the guiding device for the territorial organization of the Kingdom, adopting an advanced regionalization model.

Like many countries that have opted for the dissemination and standardization of the principles of good governance, Morocco established the National Commission for Corporate Governance (CNGE) in 2007, which developed the "Moroccan Code of Good Corporate Governance Practices" in 2008 and the "Moroccan Code of Good Governance Practices for Public Companies and Institutions" in 2011.

On the side of policy and government action, it has been proceeding since 2017 to the implementation of the national strategy to fight against corruption and the devices for its implementation. It should be noted that following a significant improvement in the Corruption Perception Index (CPI) in 2017 and 2018, the trend has been reversed for the years 2019 and 2020. In 2017 and 2018, Morocco ranked 81st and 73rd out of 180 countries, with scores of 40 and 43 out of 100, respectively. On the other hand, for the years 2019 and 2020, Morocco occupied the 80th and 86th places, with scores of 41 and 40 respectively. A deep reflection, in the light of these results, will have to identify new ways of improvement, including the role that digital can play in this matter.

### **4. RESEARCH METHODOLOGY AND LITERATURE REVIEW**

The most exhaustive reference project on governance is the World Bank report that examines six dimensions of governance. We present the following the indicators adopted by the World Bank of good governance, namely: Voice and Accountability; Political Stability and Absence of Violence; Government Effectiveness; Regulatory Quality; Rule of Law; and Control of Corruption.

#### **4.1 Voice, Accountability and Civic engagement**

According to the literature developed on the effects of the use of digital tools on civic engagement, two perspectives have been adopted. A first so-called dystopian perspective which states that digitalization acts as a substitute for civic engagement activities and reduces social contacts leading to civic engagement, and a second, the so-called utopian perspective, according to which the use of digital tools is an effective means for online social connections and sharing of information about civic engagement activities among Internet users (Eimhjellen (2019) ; Erhardt and Freitag (2019); (Placek, 2017); Gil de Zúñiga and Valenzuela (2011); Shah and al, (2005)). However, some studies find no direct effect of Internet use on civic engagement (Katz and Aspden (1997); Kohut (2000)). According to Sokolov and Verevkin (2016), the internet offers new forms of civic

engagement via portals and websites, civic apps and social networks, crowdsourcing and crowdfunding platforms. All these digital tools offer important possibilities for communication, transmission of information, resources, research, and represent a specific and important opportunity for horizontal relationships and connections with civil society actors and members. According to Eimhjellen (2019), Digital technology is a democratizing tool that could mobilize new groups into civic engagement by increasing the flow of information and opportunities for participation within the community. Amnå and al, (2016) show in their study of the Swedish context that civic and political engagement through social media attracts those who are already involved. However, individuals who are not interested in civic and political action are not impacted by digital tools.

#### **4.2 Political stability**

Digital tools can play a fundamental role in the accountability of governments and political entities. According to the study conducted by Gallego and al, (2018), the use of digitalization has increased voter turnout and support for conservative political parties in the UK. Digital tools replace, in some cases, human resources, create new situations of impoverishment and produce political instability. According to the "Eurobarometer" survey conducted in 2017, 72% of respondents agreed with the statement that digital technologies such as robots and artificial intelligence are factors in reducing employment, having contributed to the recent political turmoil in many countries. Job instability can lead to "political withdrawal" as citizens focus on solving their more pressing problems than participating in elections (Rosenstone, 1982).

#### **4.3 Government Effectiveness**

Government effectiveness refers to the assessment of the quality of services provided to citizens and the achievement of organizational missions and goals. Achieving government effectiveness is difficult because it depends more on environmental factors, top-down support, overall strategic management, and stakeholder networking (Yang and Rho (2007)).

The overall satisfaction index for digital public services is 4.87 out of 10 (Rho (2004)). From his study, it appears that citizens perceive information about government activities as available and accessible on websites, but they are less satisfied with the information that is provided. Electronic tools support and stimulate good governance in that they facilitate rapid, transparent, accountable, efficient, and effective interaction with the public, citizens, businesses, and other organizations ((Basu (2004)).

#### **4.4 Regulatory Quality**

Some researchers find that information and communication technologies (ICT) have the potential to reform government public services by providing better quality of public service, eliminating some costs and delays (Gupta and al, (2008)) and empowering citizens (Bertot and al, (2010)). According to Carter and Belanger (2003), the use of new information and communication technologies improves efficiency and access to government

services for all stakeholders in G2C, G2E, G2G and G2B services.

#### **4.5 Rule of Law**

New technologies represent an interesting and potentially transformative field of action. The repercussions of their implementation can affect all areas of our existence, first and foremost the law, which must respond to the demands of the community and provide modern answers mainly in the field of civil law (Dacornia (2021)). The progress made in the field of information technology is likely to affect the integrity, dignity and human rights of the individual. International collaboration is needed to ensure that human rights and dignity are fully protected in this global context (UN General Assembly, Vienna Declaration and Programme of Action, 1993).

#### **4.6 Control of Corruption**

Corruption is a real scourge that prevents progress in the development process. New information and communication technologies improve transparency and accountability in public services. They help identify and curb corrupt behavior (Bertot and al, (2010); McCue and Roman, (2012)).

The relationship between the information technologies and the reduction of corruption in the Chinese context was the focus of the study conducted by (Xinli, 2015). The researcher finds that information technologies play positively on building healthy institutional systems and in improving healthy executive systems. Information and communication technologies can help reduce corruption through the whistleblower support mechanism (Salbu (2001)). Digital tools strengthen existing processes and limit the likelihood of corruption, resulting in more accountable, responsive, and democratic systems (McCue and Roman, (2012)). In line with this, Singh and al (2010) conduct a survey of 918 citizens on their perception of corruption and find a positive and significant relationship between digitalization and the reduction of corruption in India, Ethiopia and Fiji.

Sturges (2004) suggests that information asymmetry is seen as a major factor contributing to the prevalence of systemic corruption. New information and communication technologies remain a flexible means of providing updated information to citizens in real time. ICT is a field of action for transparent delivery of public services and a limitation of the corruption that results from it.

### **5. VARIABLES AND FINDINGS**

Our variables for measuring good governance are obtained from the World Bank database covering the period (2000-2019). The variables concerning digitalization are taken from the International Telecommunication Union (ITU) database.

Concerning the indicators of good governance, the Unobserved Component Model (UCM) method is adopted for combining data from different types of sources. Different indicators use different implicit and explicit choices of units to measure governance, but the aggregation process adjusts for these differences. The benefits of the aggregation method (UCM):

- Allows data to be put into common units.
- Allows for weighting of rescaled indicators rather than simply constructing unweighted averages, which reduces the margins of error in the aggregated indicators;
- Allows to show the uncertainty in the aggregated governance indicators as measured by the standard deviations and confidence intervals generated by the UCM.

(lowest) to 100 (highest) for all countries in the world. Countries are ranked in increasing order based on their governance point estimates. The global averages of the good governance indicators are considered constant over time.

The governance estimation is calculated based on a conditional average called "Estimate". The Estimate is the weighted average of the adjusted scores for each country. Higher values correspond to better governance scores. It is written according to the following formula:

$$E[g_j | y_{j1}, \dots, y_{jK}] = \sum_{k=1}^K w_k \frac{y_{jk} - \alpha_k}{\beta_k}$$

With ;

$W_k$ : weights assigned for each source  $k$  and they are greater as the variance of the source's error term is smaller. Sources that provide a more informative governance signal receive a higher weight.

$W_k =$

$y_{jk}$  : linear governance

$$y_{jk} = \alpha_k + \beta \frac{\sigma_k^{-2}}{1 + \sum_{k=1}^K \sigma_k^{-2}}$$

$\epsilon_{jk}$  : pertur

$\alpha_k, \beta_k$  and  $\sigma_k$  : parameters obtained through the maximum likelihood method.

The standard normal units of the governance indicator, range from about -2.5 to 2.5, and in percentile ranks from 0

**Table 1: Descriptive statistics**

Variables	Mean	Std. Dev	Min	Max
<b>Ctr_corruption</b>	-0.2705263	0.1035736	-0.44	-0.11
<b>Rule_Law</b>	-0.1515789	0.1089477	-0.3	0.13
<b>Reg_Quali</b>	-0.1794737	0.0924646	-0.41	-0.03
<b>Gover_Effectiveness</b>	-0.1331579	0.0600049	-0.28	-0.04
<b>Political_stability</b>	-0.3921053	0.1146773	-0.57	-0.07
<b>Voice_Accountability</b>	-0.6536842	0.0902595	-0.76	-0.45
<b>Fixed_Tel_Subs</b>	14.53488	0.4099378	13.93547	15.1371
<b>Inter_Users(%)</b>	2.116781	0.8127128	0	2.995732
<b>Mobile_Cellular_Subs</b>	16.83009	0.8967303	14.66652	17.65854

**Table 2: Correlation Matrix**

	<b>Ctr_corr uption</b>	<b>Rule_La w</b>	<b>Reg_ Quali</b>	<b>Gover_Effe ctiveness</b>	<b>Political _stabilit y</b>	<b>Voice_Acco untability</b>	<b>Fixed_T el_Subs</b>	<b>Inter_Us ers(%)</b>	<b>Mobile_C ellular_S ub</b>
<b>Ctr_corruption</b>	1.0000								
<b>Rule_Law</b>	0.7483	1.0000							
<b>Reg_ Quali</b>	-0.1096	0.1131	1.0000						
<b>Gover_Effectiveness</b>	0.0462	0.2524	0.7303	1.0000					
<b>Political_stability</b>	0.7455	0.8126	0.3506	0.3227	1.0000				
<b>Voice_Accountability</b>	0.5958	0.7672	0.1846	0.2634	0.7807	1.0000			
<b>Fixed_Tel_Subs</b>	-0.4103	-0.5208	0.4745	0.2977	-0.3310	-0.4875	1.0000		
<b>Inter_Users(%)</b>	-0.1956	-0.4672	-0.0681	0.1044	-0.3761	-0.4949	0.5592	1.0000	
<b>Mobile_Cellular_Subs</b>	-0.3042	-0.5817	-0.0259	0.1186	-0.4588	-0.5182	0.6932	0.9142	1.0000

Regarding the correlation between digitalization and good governance in Morocco, we note from the above matrix that there is a strong negative relationship between digitalization and good governance in Morocco as measured by control of corruption, rule of law, regulatory quality, political stability, and civic engagement.

However, concerning government effectiveness, reflecting citizens' perception of the quality of public services, we find a positive relationship with the three digitalization variables. This result could be explained by the adoption by the Moroccan government of national digital programs such as e-Maroc 2010, Maroc Numeric 2013, Maroc Digital 2020, etc... and which have led to an improvement in the services provided to users.

To synthesize the data related to the 6 indicators of good governance, we conducted a Principal Component Analysis (PCA) to determine a composite variable for good governance in Morocco. The results are as follows:

**Table 3: Correlation of the composite variable**

	<b>Compo site</b>	<b>Fixed_T el_Subs</b>	<b>Inter_U sers(%)</b>	<b>Mobile_Ce llular_Sub</b>
<b>Compos ite_gov</b>	1.0000			
<b>Fixed_T el_Subs</b>	-0.3698	1.0000		
<b>Inter_Us ers(%)</b>	-0.3931	0.5592	1.0000	
<b>Mobile_ Cellular _Subs</b>	-0.4743	0.6932	0.9142	1.0000

Based on the analysis of the composite variable, we note that it is negatively correlated with the three measures of digitalization. Although the government effectiveness indicator is positively related to digitalization, the composite variable, which is composed of the six good governance indicators, confirms the negative relationship

found with the other five indicators, namely: control of corruption, rule of law, regulatory quality, political stability, and civic engagement.

After conducting a descriptive analysis that allowed us to have a vision on the state of the art of public governance and digitalization in the Moroccan context, and by doing the related correlation study, our results are in divergence with the studies of (Eimhjellen (2019); Erhardt and Freitag (2019); (Placek, 2017); Gil de Zúñiga and Valenzuela (2011); Shah and al, (2005)) that found a positive and statistically significant relationship between the implementation of digital tools and the improvement of good governance. However, as far as the efficiency of public authorities is concerned, our results are consistent with the conclusions of Basu (2004), whose findings develop the idea that digitalization can stimulate the efficiency of public authorities through a fast and efficient interaction with stakeholders.

## 6. CONCLUSION

The negative relationship between digitalization and good governance that emerges from our study can be explained by the fact that good governance is struggling to find an upward slope in Morocco. In addition to the corruption index, which has deteriorated, revealing the limits of anti-corruption policies and programs, the manifestations of poverty and precariousness remain present. They reveal not only the limits of the policies implemented in this area, but also severely affect the participation of citizens in political life and their active involvement in the socio-economic development process. The position of citizens regarding the quality of public service is far from reflecting the desired level of trust.

For its part, digitalization does not produce the expected effects in terms of good governance, for reasons linked to the process of introducing digital technology itself. Indeed, digitalization was initially introduced, not within the framework of an integrated vision, as a tool for improving good governance, but rather within the framework of programs and actions, essentially departmental and sectoral. Furthermore, little effort has been made to invest in the popularization of digital culture among all stakeholders, especially citizens.

It is worth noting that an analysis based on correlation alone is not sufficient to draw definitive conclusions about the link between digitalization and good governance in Morocco. To this end, we are in the process of extending this study by relying on a more in-depth statistical method.

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## Annexes

**Table 4: Digitalization variables in Morocco (period 2000-2019)**

Years	Mobile_Cellular_Subs	Inter_Use_r	Fixed_Tel_Subs
2000	14,66652	0,6931472	14,16968
2001	15,37822	1,791759	13,99059
2002	15,63984	2,079442	13,93547
2003	15,81155	1,098612	14,01372
2004	16,04948	1,386294	14,08444
2005	16,33263	1,609438	14,10904
2006	16,58839	1,94591	14,05147
2007	16,81271	2,197225	14,68838
2008	16,94296	2,302585	14,91117
2009	17,04674	2,484907	15,07291
2010	17,28069	2,397895	15,1371
2011	17,4143	2,564949	15,08698
2012	17,47949	2,639057	15,00307
2013	17,56322	2,70805	14,88876
2014	17,6023	2,772589	14,72688
2015	17,57856	2,833213	14,61409
2016	17,54154	2,890372	14,54314
2017	17,59779	2,944439	14,53159
2018	17,61633	2,995732	14,60358
2019	17,65854	0,6931472	14,53557

**Table 5: Governance variables in Morocco (period 2000-2019)**

Ctr_corruption	Rule_Law	Reg_Quali	Gover_Effectiveness	Political_stability	Voice_Accountability
-0,11	0,13	-0,03	-0,07	-0,07	-0,45
-0,19	-0,02	-0,14	-0,15	-0,26	-0,47
-0,26	-0,08	-0,27	-0,14	-0,41	-0,75
-0,14	-0,03	-0,25	-0,13	-0,31	-0,51
-0,31	-0,16	-0,41	-0,28	-0,56	-0,69
-0,41	-0,29	-0,18	-0,16	-0,46	-0,71
-0,34	-0,3	-0,22	-0,17	-0,5	-0,71
-0,38	-0,3	-0,19	-0,18	-0,57	-0,76
-0,33	-0,21	-0,06	-0,14	-0,4	-0,75
-0,2	-0,17	-0,08	-0,1	-0,38	-0,7
-0,4	-0,23	-0,12	-0,15	-0,39	-0,71
-0,44	-0,21	-0,08	-0,06	-0,47	-0,61
-0,37	-0,25	-0,12	-0,04	-0,49	-0,7
-0,27	-0,07	-0,13	-0,07	-0,45	-0,69
-0,22	-0,09	-0,17	-0,06	-0,34	-0,63
-0,13	-0,16	-0,23	-0,11	-0,31	-0,62
-0,14	-0,16	-0,23	-0,19	-0,37	-0,67
-0,22	-0,14	-0,29	-0,21	-0,34	-0,66
-0,28	-0,14	-0,21	-0,12	-0,37	-0,63