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ASSESSING THE SOCIO-ECONOMIC AND POLITICAL OUTCOMES OF THE ARAB SPRING IN ARAB LEAGUE COUNTRIES*

ABSTRACT

This paper uses the difference-in-means statistical approach to assess the socio-economic and political outcomes of the Arab Spring uprisings in 16 countries in the Arab League that experienced the region-wide protests. The main research question is: Did the Arab Spring uprisings and protests achieve the desired socio-economic and political outcomes? To answer this question, we use six Worldwide Governance Indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption to assess whether positive or negative changes occurred in 16 countries in the Arab League after the uprisings and protests. Our empirical results revealed that statistically significant minor improvements in governance indicators occurred in 11 cases: five in Iraq, three in Algeria, one each in Djibouti, Sudan, and Tunisia. In contrast, we found that statistically significant negative changes occurred in 58 cases in which the governance indicators worsened: six each in Kuwait, Libya, and Syria; five each in Bahrain and Yemen; four each in Egypt, Lebanon, Mauritania, Oman, Sudan, and Tunisia; three in Jordan; two in Djibouti; and one in Algeria. In addition, the governance indicators remained unchanged in 27 cases: six in Morocco; three each in Djibouti, and Jordan; two each in Algeria, Egypt, Lebanon, Mauritania, and Oman; and one each in Bahrain, Iraq, Sudan, Tunisia, and Yemen. Interpretatively, the Arab Spring uprisings and protests worsened the governance indicators in almost all countries in the sample, especially in Egypt, Libya, Tunisia, and Yemen where the protests led to the ouster of their autocratic leaders. Intuitively, one can attribute the negative changes and outcomes to the

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ongoing governance structures in Arab League countries where uprisings and protests tend to produce leadership changes from the same pool of inept mediocre leaders.

Keywords: Arab Spring; Arab League; Uprisings and Protests; Worldwide Governance Indicators
JEL Classification: F50; F55; P47; P51; P52; R58

RIASSUNTO

Una valutazione sugli effetti socioeconomici e politici delle primavere arabe nei paesi del nord Africa

Questo articolo utilizza l'approccio della differenza tra le medie per valutare i risultati socioeconomici e politici delle primavere arabe in 16 paesi della Lega araba nei quali queste proteste hanno avuto luogo estensivamente. La prima domanda è: le primavere arabe e le proteste hanno raggiunto gli esiti socioeconomici e politici desiderati? Per rispondere a ciò utilizziamo sei indicatori Worldwide Governance - partecipazione e responsabilità, stabilità politica e assenza di violenza, efficacia del governo, qualità legislativa, ruolo della legge e controllo della corruzione - per valutare se vi sono stati cambiamenti positivi o negativi in questi 16 paesi della Lega a seguito delle insurrezioni e proteste. I nostri risultati empirici hanno rivelato che piccoli miglioramenti statisticamente significativi degli indicatori si sono verificati in undici casi: cinque in Iraq, tre in Algeria, uno per ognuno in Djibouti, Sudan e Tunisia. Al contrario abbiamo riscontrato cambiamenti negativi statisticamente significativi negli indicatori della governance in 58 casi: sei per ognuno in Kuwait, Libia e Siria; cinque ciascuno in Bahrain e Yemen; quattro ciascuno in Egitto, Libano, Mauritania, Oman, Sudan e Tunisia; tre in Giordania, due in Gibuti e uno in Algeria. Inoltre, gli indicatori di governance sono rimasti invariati in 27 casi: sei in Marocco, tre per ciascuno in Gibuti e Giordania; due ciascuno in Algeria, Egitto, Libano, Mauritania e Oman; e uno ciascuno in Bahrain, Iraq, Sudan, Tunisia e Yemen. Quindi interpretando i risultati si deduce che le rivolte e le proteste delle primavere arabe hanno peggiorato gli indicatori di governance in quasi tutti i paesi presi a campione e specialmente in Egitto, Libia, Tunisia e Yemen dove le proteste hanno causato la cacciata dei loro leader autocratici. Intuitivamente i cambiamenti e risultati negativi si possono attribuire alla struttura dei regimi politici dei paesi della Lega araba dove le rivolte e le proteste tendono a produrre cambi di leadership nell'ambito della stessa classe dirigente inetta e mediocre.

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1. INTRODUCTION

The Arab Spring uprisings began in December 2010 when Mohammed Bouazizi set himself on fire in the street of a little town in Tunisia in protest against police seizure of his vegetable stall for failure to obtain a permit. Generally, nationwide protests are driven by pervasive economic, political, and social problems. In many developing countries, some of the economic issues that cause nationwide protests include massive youth unemployment, high inflation rate, extreme poverty rates as measured by the standard of living, economic and social inequalities, and the absence of economic opportunities. From the political standpoint, people take to the streets to protest against government ineptitude, corrosive corruption among the political elites who thrive at the expense of the poor working citizens, and nepotism-cronyism. There are many social issues that tend to propel citizens to the streets in protests in this era of digital technology where information is easily disseminated through different social media platforms simultaneously. Among these social issues are freedoms with respect to assembly or association, religion, press, and access to the internet. According to research scholars (Ogbonnaya, 2013; Refle, 2019; Mushtag and Afzal, 2017), the goals of the Arab Spring included achieving democracy, free elections, economic freedom, human rights, employment, regime change, and Islamism.

This paper contributes to the literature by using the six Worldwide Governance Indicators[1] developed by the World Bank to assess the socio-economic and political outcomes of the Arab Spring in 16 countries in the Arab League (Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Sudan, Syria, Tunisia, and Yemen) that experienced variants of the uprisings and protests. For each country, we use the six governance indicators covering 10 years *before* and 10 years *after* the Arab Spring uprisings and protests to assess whether positive or negative changes occurred with respect to the economic, political, and social institutions in these countries after the uprisings and protests. Notwithstanding the plethora of extant studies and worldwide interest in the Arab Spring uprisings, to the best of our knowledge, this is the first study to examine the direction of change in six key governance indicators for the Arab League countries in the aftermath of the uprisings and protests. Specifically, we utilize the six World Bank's Worldwide Governance Indicators (WGI) to provide

[1] The World Governance Indicators (WGI) developed by economists at the World Bank consist of six governance indicators: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption that cover over 200 countries since 1996.

graphical and statistical evidence on the direction of change in 16 Arab League countries that experienced the uprisings.

In answering the main research question as to whether the Arab Spring uprisings and protests achieved the desired socio-economic and political outcomes, we employ the six governance indicators to assess the outcomes of the uprisings and protests; therefore, we test six null and research/alternative hypotheses for each country in our sample. The null hypothesis for each governance indicator is that the specific governance indicator (voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption) remained unchanged in its magnitude before and after the Arab Spring uprisings and protest; and the alternative hypothesis is that the specific governance indicator either improved or worsened in magnitude after the uprisings and protests.

Our empirical results show that statistically significant minor improvements in the governance indicators occurred in 11 cases: one each in Djibouti, Sudan, and Tunisia; three in Algeria; and five in Iraq. In contrast, we found that statistically significant negative changes occurred in which the governance indicators worsened in 58 cases: six each in Kuwait, Libya, and Syria; five each Bahrain and Yemen; four each in Egypt, Lebanon, Mauritania, Oman, Sudan, and Tunisia; three in Jordan; two in Djibouti; and one in Algeria. In addition, the governance indicators remained unchanged in 27 cases: six in Morocco; three each in Djibouti and Jordan; two each in Algeria, Egypt, Lebanon, Mauritania, and Oman; and one each in Bahrain, Iraq, Sudan, Tunisia, and Yemen. Interpretatively, in the aftermath of the Arab Spring uprisings and protests, the governance indicators in 16 countries in the Arab world worsened, especially in Tunisia, Egypt, Libya, and Yemen where the protests actually led to the ousted of their autocratic leaders. Intuitively, one can attribute the negative changes and outcomes to the ongoing governance structures in countries in the Arab League where uprisings and protests tend to produce leadership changes from the same pool of backward-looking transactional leaders whose autocratic impulses and tendencies amplify once they ascend to the presidency.

We organize the rest of this paper as follows. Section 2 provides the literature review of extant studies on the Arab Spring uprisings and protests. Section 3 uses graphical illustrations to show the trends or trajectories in the six governance indicators before and after the Arab Spring. Section 4 provides the methodology and estimated results of the positive and negative changes

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that occurred in the Worldwide Governance Indicators in the aftermath of the Arab Spring uprisings and protests. Section 5 concludes with some policy-political implications.

2. LITERATURE REVIEW

A plethora of studies have examined various causal factors and the consequences or implications of uprisings and protests worldwide long before the Arab Spring emerged in December 2010. In a study by Hussain and Howard (2012), they asked whether the Arab Spring uprisings and protests could be construed as the "fourth wave" of democratization since it followed the "third wave" that occurred between 1989 and 1995 during which many remnants of the Soviet Union and other failed authoritarian regimes in other parts of the world transitioned into functional electoral democracies. Abushouk (2016) likewise asked whether the Arab Spring was the fourth wave of democratization. According to Hussain and Howard (2012), asking whether the Arab Spring was "democracy's fourth wave" was an important research question given the fact that the countries in the Middle East and North Africa (MENA)

"were noticeably devoid of popular democracy movements – until the early months of 2011."

Their underlying argument hinged on the significance of information technologies since democratization movements existed long before technologies like mobile phones and the Internet existed in MENA countries that experienced the Arab Spring uprisings and protests. However, these regimes became more susceptible to the unifying call for democratization movements, which could be operationalized and coordinated through the modern digital information technologies, and this lead Hussain and Howard (2012) to conclude

"that information infrastructure – especially mobile phone use–consistently appears as one of the key ingredients in parsimonious models for the conjoined combinations of the causes behind regime fragility and social movement success,"

and that the absence of internet use explains low levels of success in many previous democratization movements.

In a related study, Bruns *et al.* (2013) highlighted how Twitter users in Egypt and Libya used social media platforms or networks in Arabic, English, and mixed-language tweets to register their oppositions to the long-serving leaders in these countries. Studies such as Axford (2011), El

Hamamsy (2011), Gladwell (2011), and Morozov (2011) have different opinions about the extent to which activists and leaders of the Arab Spring uprisings and protests used Twitter and social media networks to express their views and orchestrate resistance. Gladwell (2010) considered the social media networks as the

"*additional* communication tools for activists, rather than drivers of the demonstrations themselves."

Farooq *et al*. (2017) used the theory of relative deprivation, as manifested by the persistently high unemployment of educated university graduates and extreme poverty, to explain the origin of the Arab Spring, the ideology as well as the demands of civil society. According to Farooq *et al*. (2017), the Arab Spring provides a good description of the role that well-educated youth played in information dissemination as well as the power of social media in the age of digital technology. Blakemore (2019) addressed the essence of the Arab Spring and how it spread across the MENA region.

Anderson (2011), Kazamias (2011), Korotayev and Zinkina (2011), Aissa (2012), Haseeb (2012), Ansani and Daniele (2012), Dalacoura (2012), Fuhrer (2013), Ogbonnaya (2013), Salih (2013), Lynch (2013), Anbarani (2013), Idris (2016), Conde (2017), Mushtag and Afzal (2017), Mujani and Musa (2018), and Ahmad (2019) have examined and discussed the causal factors, consequences, and implications[2] of the Arab Spring uprisings and protests. The preponderance of these studies identified the major causal factors as the relentless unemployment of young university graduates; the severe economic downturn due to financial crisis; the abuse of power and corrosive corruption among the political elites who thrive at the expense of the poor working citizens; the dictatorial governance structures that existed then and still remain pervasive thereafter in nearly all MENA countries; the oppressive and inhumane discriminatory treatment of people (ethnic and religious minorities) based on political and socio-cultural-religious affiliations; and skyrocketing food prices. More importantly, the self-immolation of Mohamed Bouazizi in Tunisia triggered the regional contagion of the uprisings and protests.

Mushtag and Afzal (2017) argued that

[2] For more, see Refle's (2019) literature review of the causes and implications of the 2010/2011 uprisings, which cited over 110 studies, since 2010, that have already examined the Arab Spring uprisings and protests in MENA.

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"it is much difficult to predict the consequences of the Arab Spring both in streets as well as in polling booths as much as the events are unfolding as yet."

However, the study concluded that the Arab Spring uprisings led to the overthrow of authoritarian rulers in Tunisia, Egypt, and Libya. Furthermore, it also prompted the leaders/rulers in Oman, Saudi Arabia, Morocco, and Bahrain to grant social and economic rights to their citizens in order to mitigate the effects of the uprisings contagion. In addition, the uprisings resulted in the development of public political sphere

"where common people could discuss politics at public places and discuss their expected future and effort to attain democratic transition in Arab world"

and compelled some surrounding countries such as Saudi Arabia and Morocco to adopt proactive approaches while Yemen, Libya, and Syria adopted the reactive approaches that culminated into civil wars, which are still ongoing in Yemen and Syria.

According to Mushtag and Afzal (2017), Saudi Arabia in its proactive approach announced and provided a financial package of $U36 billion as relief to families in order to keep the Saudis from becoming part of the Arab Spring uprisings and protests. In contrast, Morocco took a different proactive approach by introducing some institutional reforms and by adopting a new constitution, which restructured the political and social landscape of Morocco. The Arab Spring compelled the Arab League to send their forces to defend the Yemeni president and also propelled some reforms within the Gulf Cooperation Council. From foreign policy and diplomatic stance, the Arab Spring altered international relations and support from two different dimensions. While the Arab Spring gained the support of western democracies because many considered the protests as the fourth wave of democratization movements around the world, China and Russia, the two major autocratic countries that are averse to democratization movements, preferred the *status quo* since they have heavy investment in oil in the MENA region.

Robinson (2020), Matta *et al.* (2019), Tekin and Temel (2019), and Zekri (2016) provided the implications or legacies of the Arab Spring uprisings. In documenting the democratic progress made in Tunisia and Egypt – two countries considered as similar because they are both Muslim-majority Arabic speaking countries in North Africa, Zekri (2016) concluded that the Arab Spring

yielded vastly divergent outcomes in both countries. From Zekri's (2016) perspective, while Tunisia made tremendous progress by transitioning to democracy through constitutional developments, which Tekin and Temel (2019) also alluded to in their study, Egypt continued to struggle as the nation who experienced a counter-revolution that led to the deposition of their democratically elected president. In analyzing the impact of the Arab Spring on the Tunisian economy, Matta *et al.* (2019) used the Synthetic Control Methodology (SCM) to estimate the loss in Tunisia's gross domestic product (GDP), and they found the loss in GDP to be 5.5 percent in 2011, 5.1 percent in 2012, and 6.4 percent in 2013. In addition, they found that investment was the main channel through which the Arab Spring adversely impacted the Tunisian economy.

Kolster (2012) addressed the economic and social challenges that the Arab Spring posed to Tunisia after the revolution. Robinson (2020) provided graphical illustrations of the legacy of the Arab Spring uprisings from eight different categories: democracy, standard of living, youth unemployment, freedom of the press, displacement, internet freedom, corruption, and women's empowerment in those countries in the MENA region. With respect to democracy, Robinson (2020) showed no lasting democratic progress in MENA, except in Tunisia, and that the standard of living has fallen in Libya, Syria, and Yemen while it remained stagnant in other MENA countries. While youth unemployment remained high after the uprisings, the freedom of the press has even worsened as manifested by the increased jailing and/or assassinations of journalists in the region. Robinson (2020) also showed that the displacement of people intensified in the three countries that experienced civil wars due to the uprisings – more in Yemen and Syria than in Libya, and that internet freedom remained mostly stagnant or declined, except for Tunisia, whose internet access index score has improved significantly since 2011. The study found that government corruption remained unchanged or worsened in the MENA region, despite the fact that chronically corrosive government corruption in the region was instrumental in the Arab Spring uprisings and protests. From what could be considered to be a positive change, Robinson (2020) showed that women's representation has increased in most of the countries in the region.

The implications of the Arab Spring uprisings for the MENA region and the future challenges and policy options led Yousef *et al.* (2020) at the Brookings Doha Center (BDC) to make salient policy recommendations linked to governance, which are tied to economic security, political freedom, and social justice. They recommended that in order to build sustainable states in the

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region, the MENA policymakers must lunch a new governance reform agenda, and that international policymakers must engage indigenous civil society actors. In addition, they also recommended that policymakers must do more to address the drivers of inequality to promote long-term regional stability, must take steps to address the MENA region's "triple crisis" in order to build sustainable states, and that the MENA states must do more to address the legitimate aspirations of their citizens.

3. THE TRENDS IN GOVERNANCE INDICATORS BEFORE AND AFTER THE ARAB SPRING UPRISINGS

The literature review shows that uprisings and protests worldwide are deeply entrenched in economic, political, and social issues, and that the causal factors fall into different categories: authoritarian and monarchial governance structures, demographic structural factors, extreme poverty, oppressions and human rights violations, high unemployment of well-educated youth and inflation, kleptocracy and political corruption, and sectarianism (Ogbonnaya, 2013). A recurring factor in previous studies of the Arab Spring was the self-immolation of Mohamed Bouazizi in Tunisia in December 2010, which triggered the confluence of all the causal factors.

Consequently, we believe that the past and future outcomes or the consequences of the Arab Spring uprisings and protests can be measured using the World Bank's (2020) Worldwide Governance Indicators (WGI), which capture six key dimensions of public governance in over 200 countries and territories. These indicators have not been fully utilized to analyze the extent of the changes that emerged after the Arab Spring uprisings until now. According to Mushtag and Afzal (2017), the Arab Spring forced Tunisia to adopt a new constitution with which it transitioned to democracy, and it also compelled other countries in the region to form

"a public sphere where common people could discuss politics at public places and discuss their expected future and effort to attain democratic transition in Arab world."

Essentially, the Arab Spring uprisings forced leaders in the Arab League countries to give voice to their citizens and also acquiesce to accountability. Giving voice to citizens and the acquiescence to accountability amplified the importance of "Voice and Accountability." Similarly, high unemployment, inflation, and poverty rates are indicative of how effective or ineffective a government could be when there are economic challenges. As Robinson (2020) pointed out, more journalists have been jailed in Egypt, more people displaced due to the

turmoil, and both are indicative of political stability and absence of violence or political instability and the existence of political violence. It is important to analyze changes in the key governance indicators espoused by the World Bank (2020) to see whether the demonstrations, protests, riots, and the civil wars associated with the Arab Spring uprisings in Arab League countries achieved the much desired or anticipated socio-economic and political outcomes. The World Bank scores these six governance indicators from approximately -2.5 (weak) to 2.5 (strong) governance performance.

Figures 1A through 1F depict the trends in voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption in Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Sudan, Syria, Tunisia, and Yemen, before and after the Arab Spring uprisings and protests. With respect to voice and accountability (VA) depicted in Figure 1A, Iraq and Tunisia showed remarkable positive improvement after 2010. Though Morocco showed slight improvement, but it failed to rise to its 1996 level. In contrast, voice and accountability worsened in some of these countries, especially in Bahrain, Djibouti, Egypt, Libya, and Yemen while no noticeable changes occurred in the other countries in the sample.

Figure 1B shows that political stability and absence of violence (PV) did not show any positive improvements except for Algeria while Bahrain, Egypt, Libya, Oman, Syria, Tunisia, and Yemen stand out as the countries where PV worsened after 2010. Government effectiveness (GE) depicted in Figure 1C seemed to worsen in all the countries after 2010, except for Algeria and Iraq. As for the regulatory quality (RQ) in Figure 1D, Bahrain, Jordan, and Oman remained above the zero scale with slight changes after the Arab Spring. The rule of law (RL) depicted in Figure 1E shows Bahrain, Kuwait, Jordan, and Oman in the positive zone with no noticeable changes while the other countries showed negative trajectories after the 2010 Arab Spring uprisings and protests, especially in Libya, Syria, and Yemen. With respect to the control of corruption (CC) depicted in Figure 1F, Algeria, Bahrain, Djibouti, Jordan, and Tunisia showed slight improvement after 2010 even though they did not catch up to their pre-Arab Spring levels. Similarly, Morocco showed some improvement since 2014 but still worse than its 1998 level. Bahrain, Kuwait, and Jordan moved from the positive zone for CC into the weak performance range after 2010.

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Figure 1A - Trends in Voice and Accountability Before and After the Arab Spring

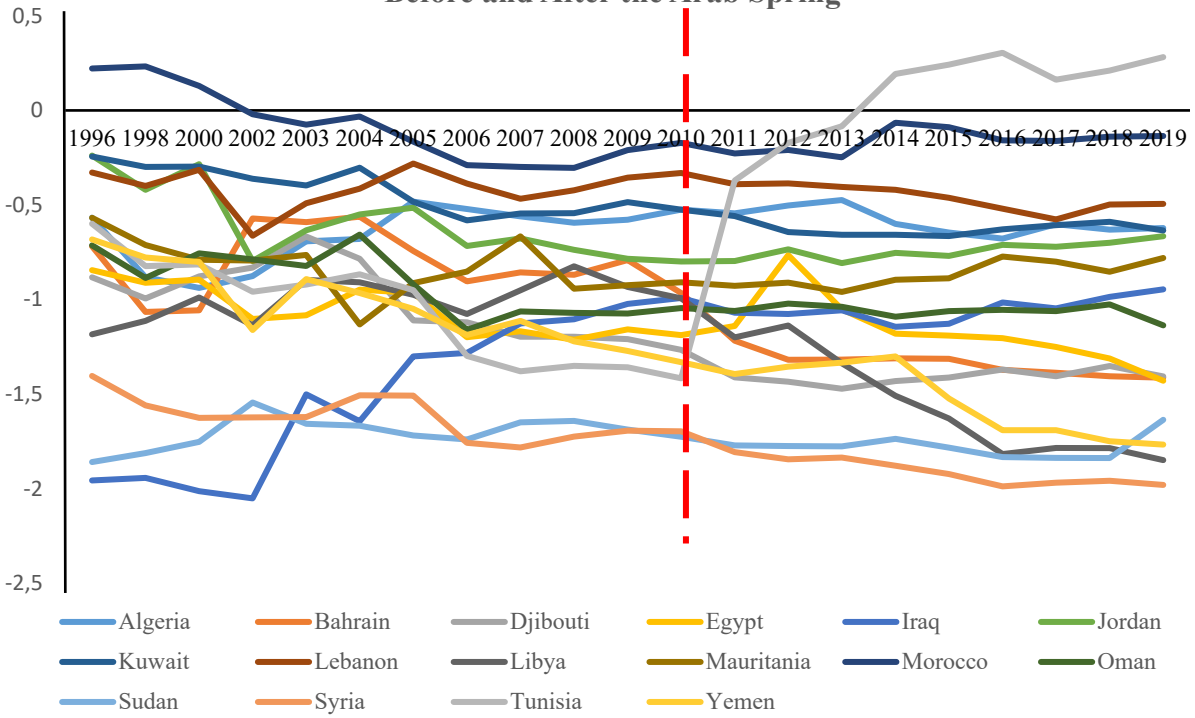


Figure 1B: Trends in Political Stability and Absence of Violence Before and After the Arab Spring

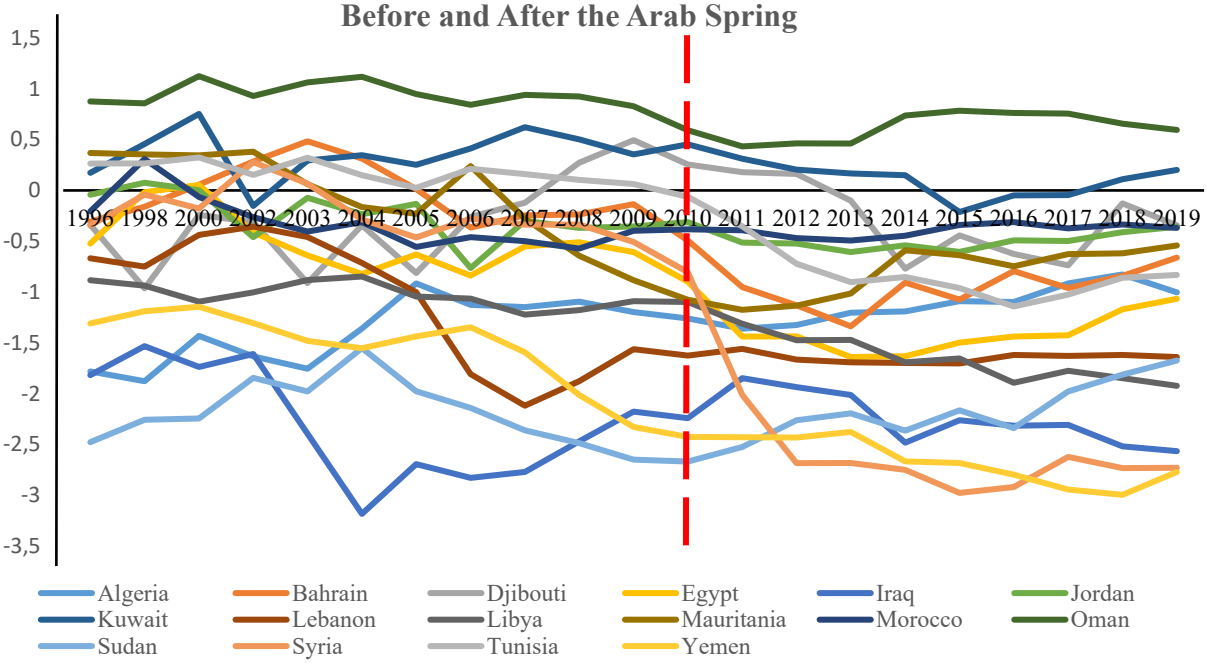


Figure 1C: Trends in Government Effectiveness Before and After the Arab Spring

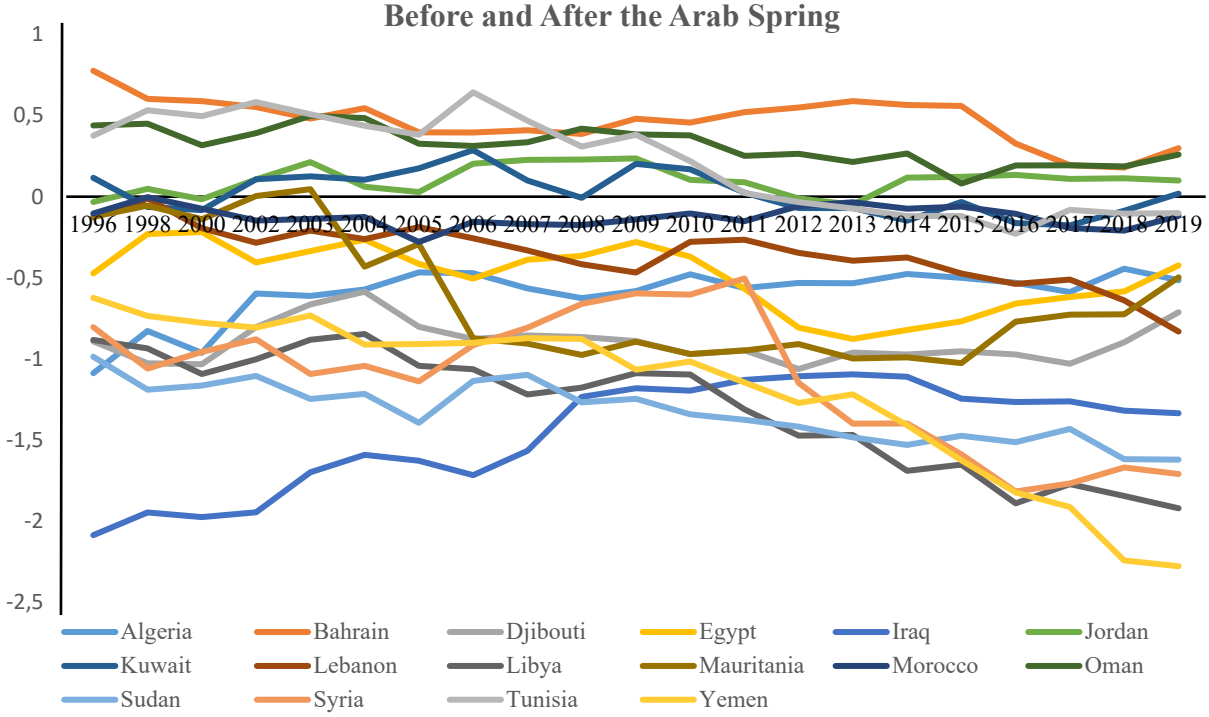
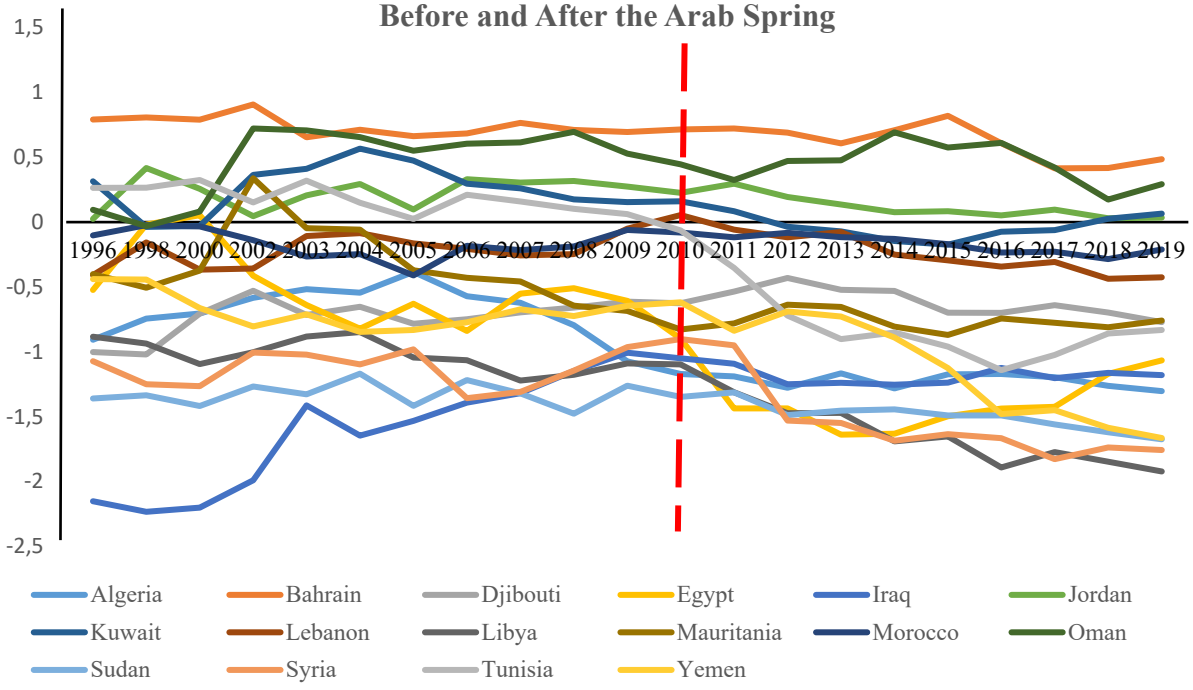


Figure 1D: Trends in Regulatory Quality Before and After the Arab Spring



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Figure 1E: Trends in Rule of Law Before and After the Arab Spring

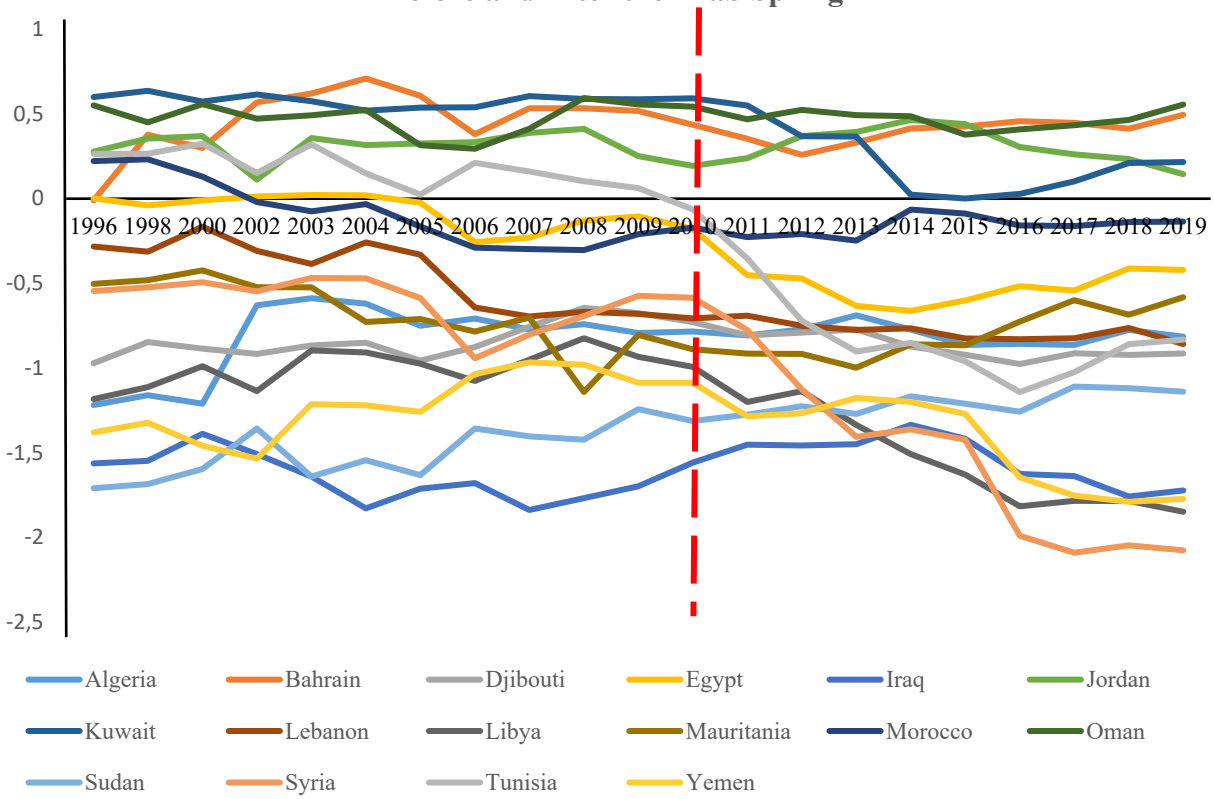
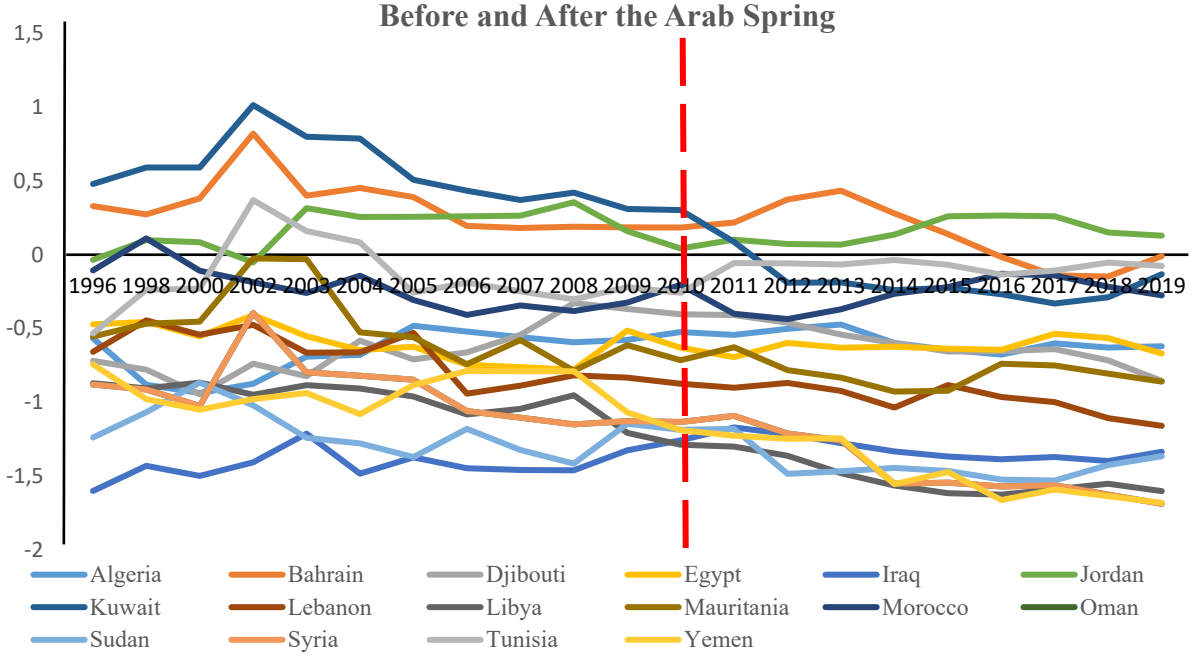


Figure 1F: Trends in Control of Corruption Before and After the Arab Spring



An important issue is the wisdom of relying solely on the trajectories of the six governance indicators depicted in Figures 1A-1F to determine the extent to which the Arab Spring uprisings and protests resulted in the desired socio-economic and political outcomes. In order to avoid erroneous inferences and policy prescriptions, in the next section, we also provide statistical tests to show whether the 16 countries in our sample experienced positive or negative outcomes/changes in VA, PV, GE, RQ, RL, and CC after the Arab Spring uprisings and protests.

4. Methodology and estimated results

In this section, we use the difference-in-means (DIM) estimator method to provide statistical evidence on whether the 16 Arab League countries experienced positive or negative changes in the World Governance Indicators (WGI) after the Arab Spring uprisings and protests. The DIM or difference-in-differences[3] (DID) estimator method is commonly used in economics and the other social sciences as the summary statistics in meta-analysis when measuring outcomes made on the same scale of variables, before and after.

With the WGI data covering 10 years before and 10 years after the Arab Spring, the DIM estimate or assessment of socio-economic and political outcomes can be written as:

$$\begin{aligned} DIM &= \overline{WGI}_{Before} - \overline{WGI}_{After} \gtreqless 0 \text{ or } \quad DIM = \overline{WGI}_{Before} - \overline{WGI}_{After} \gtrless 0 \\ &= \Delta\overline{WGI} \gtreqless 0 \quad \text{or} \quad \Delta\overline{WGI} \gtrless 0 \end{aligned} \tag{1}$$

where $\overline{WGI}$ and $\Delta\overline{WGI}$ represent the annual average and the change or difference in annual average of each one of the six world governance indicators (*VA, PV, GE, RQ, RL*, and *CC*) before and after the Arab Spring uprisings. To ascertain statistically the outcomes with respect to each indicator, we express the *DIM* in equation (1) in six separate sets of null hypotheses (H_0) and alternative hypotheses (H_A) for each of the 16 countries in the Arab League in our sample as:

$$H_0: \ \overline{VA}_{Before} = \overline{VA}_{After} \ \text{ versus } \ H_A: \ \overline{VA}_{Before} \neq \overline{VA}_{After} \tag{2},$$

[3] For more about difference-in-differences or the difference-in-means method, see Athey and Imbens (2006, 2017), Stock and Watson (2019), Wooldridge (2016), Lechner (2011), and Bertrand *et al.* (2004).

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$$H_0: \ \overline{PV}_{Before} = \overline{PV}_{After} \ \text{versus} \ H_A: \ \overline{PV}_{Before} \neq \overline{PV}_{After} \quad (3),$$

$$H_0: \ \overline{GE}_{Before} = \overline{GE}_{After} \ \text{versus} \ H_A: \ \overline{GE}_{Before} \neq \overline{GE}_{After} \quad (4),$$

$$H_0: \ \overline{RQ}_{Before} = \overline{RQ}_{After} \ \text{versus} \ H_A: \ \overline{RQ}_{Before} \neq \overline{RQ}_{After} \quad (5),$$

$$H_0: \ \overline{RL}_{Before} = \overline{RL}_{After} \ \text{versus} \ H_A: \ \overline{RL}_{Before} \neq \overline{RL}_{After} \quad (6),$$

and

$$H_0: \ \overline{CC}_{Before} = \overline{CC}_{After} \ \text{versus} \ H_A: \ \overline{CC}_{Before} \neq \overline{CC}_{After} \quad (7).$$

To find the mean with which to test the changes both before and after, we let WGI_{Before} and WGI_{After} represent each of the six governance indicators as expressed in hypotheses (2) – (7), $\Sigma\, WGI_{\text{Before}}$ and $\Sigma\, WGI_{\text{After}}$ are the sums of each governance indicator. Furthermore, the difference is $D = WGI_{Before} - WGI_{After}$ while D^2 and ΣD^2 are the square difference and the sum of the square difference, respectively. To make comparison before and after, we estimate the standard deviation (S_D) and standard error ($S_{\overline{D}}$) for each country in the sample expressed as:

$$S_D = \sqrt{\frac{1}{N}\sum D^2 - \left(\Delta\overline{WGI}\right)^2} \quad (8),$$

$$S_{\overline{D}} = \frac{S_D}{\sqrt{N-1}} \quad (9),$$

$$t = \frac{\Delta\overline{WGI}}{S_{\overline{D}}} \quad (10),$$

and

$$df = N - 1 \quad (11),$$

where t is the estimated value with which to confirm or reject the H_0 if the estimated values of the t-statistics are less than or greater than the table values, df is the degree of freedom while N stands for the 10 years before and after the Arab Spring, and $\Delta\overline{WGI}$ (or $\overline{WGI}_{Before} - \overline{WGI}_{After}$) is as defined earlier, that is, the mean difference before and after for each governance indicator.

Tables 1A-1F provide the estimated results for the null and research hypotheses depicted by hypotheses (2) through (7). While we fail to reject the null hypotheses of no changes in voice and accountability (*VA*) in Algeria, Egypt, Lebanon, Mauritania, and Morocco, we reject the null hypotheses in Bahrain, Djibouti, Iraq, Jordan, Kuwait, Libya, Oman, Sudan, Syria, Tunisia, and

Yemen where negative changes occurred after the Arab Spring uprisings. The changes are positive and statistically significant in Iraq and Tunisia. In other words, while VA_{After} improved in Iraq and Tunisia after 2010, it worsened significantly in nine countries with negative changes in voice and accountability. With respect to political stability and absence of violence (*PV*), we fail to reject H_0 in Djibouti, Morocco, and Sudan while we reject H_0 in favor of H_R in Algeria, which experienced slight, but statistically significant positive improvements in *PV* after 2010. In contrast, Bahrain, Egypt, Jordan, Kuwait, Lebanon, Libya, Mauritania, Oman, Syria, Tunisia, and Yemen showed statistically significant negative trajectories in *PV,* that is, it worsened after the 2010/2011 turmoil.

With respect to government effectiveness (*GE*) reported in Table 1C, we reject the null hypotheses in favor of the research hypotheses in all countries, except for Bahrain, Jordan, and Morocco. Statistically, the changes in *GE* in Djibouti, Egypt, Kuwait, Lebanon, Libya, Mauritania, Oman, Sudan, Syria, Tunisia, and Yemen worsened after the Arab Spring uprisings while Algeria and Iraq experienced statistically significant improvements in *GE* after 2010. Similarly, for regulatory quality (*RQ*) reported in Table 1D, we reject the null hypotheses in favor of the research hypotheses in all countries, except for Lebanon, Morocco, and Oman. While Djibouti and Iraq experienced statistically significant positive improvements in *RQ* since 2010, Algeria, Bahrain, Egypt, Jordan, Kuwait, Libya, Mauritania, Sudan, Syria, Tunisia, and Yemen experienced statistically significant negative changes in *RQ* after the Arab Spring uprisings.

For the rule of law (*RL*) reported in Table 1E, we fail to reject the H_0 in Algeria, Djibouti, Jordan, Mauritania, Morocco, Oman, and Yemen while we reject the H_0 in favor of H_R in Bahrain, Egypt, Iraq, Kuwait, Lebanon, Libya, Sudan, Syrian, and Tunisia, which experienced statistically significant negative changes in *RL* after the Arab Spring uprisings. In contrast, Iraq and Sudan experienced statistically significant positive improvement in *RL* after the Arab Spring uprisings.

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TABLES 1A-1F - *Governance Indicators before and after the Arab Spring Uprisings*

Table 1A: VA_{Before} versus VA_{After}

	Countries	VA_B	S^2_B	VA_A	S^2_A	DVA	t-value
1.	Algeria	–0.991	0.023	–0.928	0.006	–0.063	–1.90*
2.	Bahrain	–0.801	0.035	–1.302	0.017	0.499	5.79*
3.	Djibouti	–0.999	0.039	–1.395	0.003	0.396	5.49*
4.	Egypt	–1.064	0.015	–1.171	0.030	0.107	1.76
5.	Iraq	–1.499	0.155	–1.046	0.004	–0.453	–3.82*
6.	Jordan	–0.612	0.028	–0.745	0.002	0.133	2.05*
7.	Kuwait	–0.429	0.012	–0.616	0.002	0.187	5.44*
8.	Lebanon	–0.419	0.011	–0.448	0.006	0.029	0.66
9.	Libya	–0.980	0.010	–1.504	0.101	0.524	4.35*
10.	Mauritania	–0.849	0.018	–0.869	0.004	0.020	0.42
11.	Morocco	–0.103	0.341	–0.161	0.003	0.058	0.86
12.	Oman	–0.919	0.028	–1.059	0.001	0.140	2.66*
13.	Sudan	–1.687	0.005	–1.771	0.004	0.084	2.56*
14	Syria	–1.640	0.009	–1.888	0.009	0.248	9.02*
15.	Tunisia	–1.072	0.058	–0.065	0.275	–1.007	–4.59*
16.	Yemen	–1.044	0.031	–1.513	0.037	0.469	12.17*

Table 1B: PV_{Before} versus PV_{After}

	Countries	PV_B	S^2_B	PV_A	S^2_A	DPV	t-value
1.	Algeria	–1.353	0.099	–1.127	0.030	–0.226	–3.05*
2.	Bahrain	–0.00016	0.079	–0.9148	0.057	0.914	6.04*
3.	Djibouti	–0.321	0.229	–0.256	0.149	–0.065	–0.29
4.	Egypt	–0.498	0.090	–1.364	0.059	0.866	9.72*
5.	Iraq	–2.338	0.317	–2.247	0.061	–0.091	0.61
6.	Jordan	–0.261	0.061	–0.486	0.009	0.225	2.69*
7.	Kuwait	0.383	0.059	0.128	0.037	0.255	2.74*
8.	Lebanon	–1.108	0.448	–1.644	0.002	0.536	2.49*
9.	Libya	–1.036	0.015	–1.613	0.073	0.577	7.57*
10.	Mauritania	–0.082	0.192	–0.816	0.064	0.734	3.49*
11.	Morocco	–0.322	0.072	–0.392	0.004	0.070	0.76
12.	Oman	0.956	0.012	0.623	0.018	0.333	5.32*
13.	Sudan	–2.148	0.104	–2.197	0.094	0.049	0.28
14.	Syria	–0.209	0.059	–2.490	0.417	2.281	11.72*
15.	Tunisia	0.177	0.011	–0.771	0.105	0.948	10.29*
16.	Yemen	–1.538	0.136	–2.650	0.052	1.112	12.21*

Table 1C: GE_{Before} versus GE_{After}

	Countries	GE_B	S^2_B	GE_A	S^2_A	DGE	t-value
1.	Algeria	–0.629	0.024	–0.517	0.002	–0.112	–2.28*
2.	Bahrain	0.484	0.007	0.424	0.025	0.060	1.45
3.	Djibouti	–0.841	0.019	–0.949	0.009	0.108	1.88*
4.	Egypt	–0.341	0.009	–0.650	0.028	0.309	6.22*
5	Iraq	–1.650	0.077	–1.208	0.008	–0.442	–4.00*
6.	Jordan	0.133	0.009	0.083	0.003	0.050	1.32

Continued **Table 1C: GE_{Before} versus GE_{After}**

	Countries	GE_B	S^2_B	GE_A	S^2_A	DGE	t-value
7.	Kuwait	0.094	0.014	–0.054	0.011	0.148	2.41*
8.	Lebanon	–0.263	0.016	–0.466	0.030	0.203	6.43*
9.	Libya	–1.036	0.015	–1.613	0.073	0.577	7.57*
10.	Mauritania	–0.452	0.177	–0.857	0.029	0.405	2.26*
11.	Morocco	–0.141	0.005	–0.111	0.003	–0.030	–0.99
12.	Oman	0.392	0.004	0.229	0.006	0.163	6.77*
13.	Sudan	–1.208	0.008	–1.482	0.009	0.274	8.61*
14.	Syria	–0.916	0.033	–1.362	0.222	0.446	2.48*
15.	Tunisia	0.474	0.010	–0.062	0.014	0.536	11.54*
16.	Yemen	–0.860	0.010	–1.596	0.206	0.736	6.16*

Table 1D: RQ_{Before} versus RQ_{After}

	Countries	RQ_B	S^2_B	RQ_A	S^2_A	DRQ	t-value
1.	Algeria	–0.654	0.036	–1.219	0.003	0.565	10.65*
2.	Bahrain	0.739	0.006	0.618	0.019	0.121	2.52*
3.	Djibouti	–0.713	0.017	–0.616	0.011	–0.097	–2.11*
4.	Egypt	–0.498	0.090	–1.364	0.059	0.866	9.72*
5.	Iraq	–1.588	0.181	–1.179	0.005	–0.409	–2.82*
6.	Jordan	0.254	0.012	0.122	0.008	0.132	2.79*
7.	Kuwait	0.263	0.041	–0.023	0.011	0.286	2.99*
8.	Lebanon	–0.200	0.012	–0.226	0.028	0.026	0.37
9.	Libya	–1.036	0.015	–1.613	0.073	0.577	7.57*
10.	Mauritania	–0.324	0.099	–0.767	0.005	0.443	5.14*
11.	Morocco	–0.177	0.014	–0.166	0.005	–0.011	–0.28
12.	Oman	0.513	0.071	0.448	0.024	0.065	0.72
13.	Sudan	–1.321	0.009	–1.488	0.012	0.167	3.55*
14.	Syria	–1.139	0.022	–1.524	0.107	0.385	3.07*
15.	Tunisia	–0.177	0.011	–0.771	0.105	0.594	10.29*
16.	Yemen	–0.712	0.014	–1.107	0.164	0.395	3.08*

Table 1E: RL_{Before} versus RL_{After}

	Countries	RL_B	S^2_B	RL_A	S^2_A	DRL	t-value
1.	Algeria	–0.798	0.047	–0.800	0.003	0.002	0.04
2.	Bahrain	0.514	0.016	0.403	0.004	0.111	2.31*
3.	Djibouti	–0.828	0.010	–0.862	0.007	0.034	0.72
4.	Egypt	–0.074	0.011	–0.489	0.019	0.415	7.20*
5.	Iraq	–1.661	0.021	–1.542	0.019	–0.119	–2.16*
6.	Jordan	0.322	0.007	0.304	0.012	0.018	0.37
7.	Kuwait	0.577	0.001	0.245	0.047	0.332	5.45*
8.	Lebanon	–0.445	0.041	–0.779	0.003	0.334	6.26*
9.	Libya	–0.980	0.010	–1.504	0.101	0.524	4.35*
10.	Mauritania	–0.683	0.044	–0.804	0.021	0.121	1.18
11.	Morocco	–0.103	0.034	–0.161	0.003	0.058	0.86
12.	Oman	0.466	0.010	0.475	0.003	–0.009	–0.34
13.	Sudan	–1.488	0.023	–1.209	0.005	–0.279	–7.21*
14.	Syria	–0.611	0.025	–1.488	0.305	0.877	5.99*

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Continued - **Table 1E: RL_{Before} versus RL_{After}**

	Countries	RL_B	S^2_B	RL_A	S^2_A	*DRL*	*t*-value
15.	Tunisia	0.177	0.011	–0.771	0.105	0.948	10.29*
16.	Yemen	–1.208	0.038	–1.425	0.078	0.217	1.53

Table 1F: CC_{Before} versus CC_{After}

	Countries	CC_B	S^2_B	CC_A	S^2_A	*DCC*	*t*-value
1.	Algeria	–0.680	0.027	–0.582	0.005	–0.098	–1.41
2.	Bahrain	0.346	0.039	0.131	0.041	0.215	5.05*
3.	Djibouti	–0.649	0.038	–0.594	0.020	–0.055	–0.52
4.	Egypt	–0.605	0.017	–0.624	0.002	0.019	0.38
5.	Iraq	–1.411	0.008	–1.312	0.006	–0.099	–2.71*
6.	Jordan	0.199	0.016	0.148	0.007	0.051	1.46
7.	Kuwait	0.582	0.049	–0.148	0.038	0.730	8.21*
8.	Lebanon	–0.681	0.033	–0.973	0.010	0.292	7.12*
9.	Libya	–0.977	0.011	–1.499	0.018	0.522	15.39*
10.	Mauritania	–0.479	0.068	–0.797	0.009	0.318	3.66*
11.	Morocco	–0.236	0.025	–0.266	0.011	0.030	0.44
12.	Oman	–0.925	0.052	–1.425	0.049	0.500	6.94*
13.	Sudan	–1.192	0.029	–1.409	0.016	0.217	5.18*
14.	Syria	–0.925	0.052	–1.425	0.049	0.500	6.94*
15.	Tunisia	–0.108	0.052	–0.092	0.004	–0.016	–0.23
16.	Yemen	–0.935	0.014	–1.452	0.041	0.517	6.07*

Data Source: Data used for computation by the authors was obtained from the World Bank's (2020) World Governance Indicators from 1996-2019. Each country is examined for 10 years before and 10 years after the Arab Spring, and * indicates statistical significance at the 5 percent level (that is, $\alpha = 0.5$).

The estimated results reported in Table 1E are particularly important for what they signify, especially for Tunisia, Egypt, and Libya where majority of the uprisings and protests occurred.

Whenever and wherever protesters take to the streets to demand that autocratic and/or monarchial regimes transition to democracy, political scientists and legal experts generally interpret the protests as implicit demand for constitutional rule of law that would provide the strong guardrail for an effective judiciary system. Since the rule of law significantly worsened despite the changes in regimes in Tunisia, Egypt, Libya, and Yemen, one can easily surmise that changing leaders from the same pool of transactional and inept leadership would not yield the protesters' desired functional democratic outcomes. Importantly, our findings corroborate that the constitutional change in Morocco had been inconsequential.

Finally, for the control of corruption (*CC*) reported in Table 1F, we fail to reject the null hypotheses in Algeria, Djibouti, Egypt, Jordan, Morocco, and Tunisia. Changes in *CC* are more negative and statistically significant in Kuwait, Lebanon, Libya, Mauritania, Oman, Sudan, Syria, and Yemen after the 2010 Arab Spring uprisings. In other words, corruption worsened in these eight countries, especially in Libya, Oman, Syria, and Yemen. Interpretatively, this means that protests against kleptocratic regimes that resulted in changes in regimes will not reduce the level of corruption if other kleptomaniacs ascend to power. For changes in *CC*, only Iraq experienced slight improvement after the Arab Spring uprisings.

Based on the estimated results of the null and research hypotheses reported in Tables 1A-1F, Table 2 presents a summary of the changes, or the lack thereof, in these six governance indicators after the Arab Spring uprisings. In the aftermath of the uprisings and protests, the governance indicators showed 11 cases of improvements, 58 cases in which the governance indicators worsened, and 27 cases in which the indicators remained unchanged. Furthermore, we identify the governance indicators affected in each country summarized in Table 2 for full comprehension. In the case of the statistically significant improvements in 11 cases of the governance indicators after the Arab Spring uprisings and protests, three occurred in Algeria for *VA, PV,* and *GE*; one in Djibouti for *RQ*; five in Iraq for *VA, GE, RQ, RL,* and *CC*; one in Sudan for *RL*; and one in Tunisia for *VA*. In the case of the governance indicators that actually worsened significantly in 58 cases after the Arab Spring uprisings and protests, one occurred in Algeria for *RQ*; five in Bahrain for *VA, PV, RQ, RL,* and *CC*; two in Djibouti for *VA* and *GE*; four each in Egypt and Tunisia for *PV, GE, RQ,* and *RL*; three in Jordan for *VA, PV,* and *RQ*; six each in Kuwait, Libya, and Syria for *VA, PV, GE, RQ, RL,* and *CC*; four in Mauritania for *PV, GE, RQ,* and *CC*; four in Oman for *VA, PV, GE,* and *CC*; and four in Sudan for *VA, GE, RQ,* and *CC*. For the governance indicators that remained unchanged in 27 cases, two occurred in Algeria for *RL* and *CC*; one in Bahrain for *GE*; three in Djibouti for *PV, RL,* and *CC*; two in Egypt for *VA* and *CC*; one in Iraq for *PV*; three in Jordan for *GE, RL,* and *CC*; two in Lebanon for *VA* and *RQ*; two in Mauritania for *VA* and *RL*; six in Morocco for *VA, PV, GE, RQ, RL,* and *CC*; one in Sudan for *PV*; one in Tunisia for *CC*; and one in Yemen for *RL*.

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TABLE 2 - *Changes to the Six Governance Indicators after the Arab Spring*

	Countries	*Number of Improved Indicators*	*Number of Worsened Indicators*	*Number of Unchanged Indicators*
1.	Algeria	3	1	2
2.	Bahrain	0	5	1
3.	Djibouti	1	2	3
4.	Egypt	0	4	2
5.	Iraq	5	0	1
6.	Jordan	0	3	3
7.	Kuwait	0	6	0
8.	Lebanon	0	4	2
9.	Libya	0	6	0
10.	Mauritania	0	4	2
11.	Morocco	0	0	6
12.	Oman	0	4	2
13.	Sudan	1	4	1
14.	Syria	0	6	0
15.	Tunisia	1	4	1
16.	Yemen	0	5	1
	Total	**11**	**58**	**27**

Note: Compiled by the authors from H_0 and H_A test results.

On a cautionary note, if we judge the 11 cases of improved governance indicators reported in Table 2 by the ranges of approximately -2.5 to 2.5 used by the World Bank, these 11 cases for the five countries identified in the sample amount to minor improvements because they are still between 0 and -2.5 when compared to other countries worldwide that are between 0 and 2.5. In addition, the World Bank (2020) data on WGI showed that none of the 16 countries in our sample came close to 1.5 on the scale either before or after the Arab Spring uprisings and protests. In essence, these five countries are still in the weak governance performance range.

The summary raises an important question: What inference can future democratic activists draw from the outcomes of the Arab Spring uprisings and protests, which was dubbed the "fourth wave" of democratization movements? There is not a straightforward answer to this secondary research question, however, it is obvious that the governance indicators further

worsened in these countries, especially in Egypt, Libya, Tunisia, and Yemen where the Arab Spring led to the overthrow of their autocratic leaders. Given that the Arab League region experienced the "fourth wave" of democratization movements with no discernible positive socio-economic and political outcomes while other regions experienced the "third wave" of democratization movements in the 1990s with successful outcomes, one can easily conjecture that the success or failure of democratization movements could depend on the country-specific characteristics of the region involved. These entrenched country-specific characteristics may be difficult to change in an environment of ingrained cultural factors and socio-political practices. For example, in the case of Morocco, all the governance indicators remained unchanged even though Morocco took a proactive approach by introducing some institutional reforms, which led to the adoption of a new constitution with which it restructured its socio-political landscape.

5. Conclusion and policy implications

This paper complements and extends the plethora of extant studies that have examined the causal factors, the consequences, and the implications or legacies of the Arab Spring uprisings and protests for those countries in the Arab League. Earlier in the paper, we pose a multidimensional research question as to whether positive or negative changes occurred in 16 countries in the Arab League that experienced severe, to moderate or minor uprisings and protests after the self-immolation of Mohamed Bouazizi triggered the confluence of all the causal factors that propelled the Arab Spring protesters to the streets in many countries across the Arab League.

Given that uprisings and protests worldwide are driven by economic, political, and social issues and problems that the affected citizens can no longer condone, we use World Bank's (2020) Worldwide Governance Indicators to assess whether positive or negative changes occurred in 16 countries in the Arab League, where four countries (Egypt, Libya, Tunisia, and Yemen) actually experienced severe uprisings and protests that led to the ousted of their long serving autocratic leaders. These governance indicators aptly reflect the socio-political and economic problems in all countries worldwide, and to-date have not been employed in the literature to examine the consequences or legacies of the Arab Spring uprisings and protests.

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The country-specific results summarized in Table 2 show the extent of variations in the governance indicators across the countries in the Arab League. These results corroborate Yousef's *et al.* (2020) conclusion that the

"Early political concessions by the regimes in responses to the 2010 and 2011 protests quickly gave way to a resurgence of authoritarian control;"

therefore, over the coming decades, it may be far-fetched for protesters to achieve their demand for economic security, political freedom, and social justice since authoritarian controls and corrosive corruption remain unabated in the Arab world. Overall, one can surmise that the Arab Spring uprisings further worsened the socio-economic and political problems that led to the protests due to one major factor – inept self-serving leaders who ascend to power lack the cognitive and noncognitive skills necessary for effective and inclusive public governance.

This study informs policy for activists and organizations invested in democracy movements and expansion. The results suggest that achieving the desired transition from autocracies or dictatorships to democracies, which manifested in Tunisia, Egypt, Libya, and Yemen does not guarantee functional and effective democracies when gauged by the six Worldwide Governance Indicators. Given the failure to achieve the desired goals of functional and effective democracies with free and fair elections, economic security, political freedom, employment opportunities, and human rights despite the regime changes in Tunisia, Egypt, Libya, and Yemen, the key lesson for activists involved in democratization movements is to consider a change of strategy. Perhaps an effective strategy that can bring meaningful changes in governance that will benefit future generations is for these activists to get involved in the governance structures of their countries by occupying important leadership positions at the local, state, and federal levels. This will perhaps enhance effective and functional governance at all levels necessary to achieve the citizens' demand for positive socio-economic and political outcomes.

Simply using social media platforms to organize protests in order to transition autocratic regimes to democracies with new leaders from the same pool of inept narcissistic leaders will continue to yield the same ineffective noninclusive socio-economic and political institutions as well as the inept governance structures widespread across many countries around the world. Democracies in the Arab League countries as well as other countries worldwide need more educated leaders (Owoye and Onafowora, 2020) from the grassroots up to the federal level in

order to achieve and advance all-inclusive socio-economic and political institutions that would facilitate the necessary redistribution of income to mitigate the extreme inequalities, ensure the production of high quality public goods, and guarantee functional and effective democracies essential for long-term sustainable economic growth and development. Utilizing the Worldwide Governance Indicators to analyze the positive or negative socio-economic and political outcomes associated to the Arab Spring uprisings and protests suggests further avenue for research in order to understand more completely the interrelated causal factors that propel uprisings and protests, and their socio-economic and political consequences.

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