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ASSESSING INSTITUTIONAL CAPACITY IN FOSTERING INNOVATION IN THE GCC: A Comparative Analysis



WASD
WORLD ASSOCIATION FOR
SUSTAINABLE DEVELOPMENT



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Abstract

Subject

The subject of the paper is the interrelationship between knowledge-based economies (KBEs), country-level innovation, and institutional capacities of governments as key to economic and social prosperity.

Purpose

The purpose is to identify the underlying reasons as to why Gulf Cooperation Council (GCC) countries, who have identical rankings to other high-income countries, consistently underperform in innovation indices. This is done through an assessment of their institutional capacities.

Design/methodology/ approach

The methodology was based on extensive desk research, collecting quantitative as well as qualitative data. Secondary data were analysed, assessed, and/or quantified in both graphical representations and qualitative studies.

Findings

The paper identifies the need for individual GCC countries to improve institutional pillar scores through the adoption of public sector innovation. They should also employ key lessons learned from neighbouring GCC countries in an effort to increase overall innovation capacity to aid the successful transition into a KBE.

Keywords

innovation, public sector innovation, GCC, government innovation, institutional capacity, government effectiveness, government efficiency, global innovation index

Exposed to an onslaught of global drivers and developments, Gulf Cooperation Council (GCC) countries are seeking to transition from unsustainable rentier states to more sustainable knowledge-based economies (KBEs), utilising innovation as a metric. To measure the extent to which countries are proficient in applying the foundations of innovation, the Global Innovation Index (GII) was developed, where institutional capacity is an input. GCC countries have performed poorly on this index, despite the considerable financial assets available at their disposal. Countries that prioritise citizen centricity are able to create an arable environment for the required evolutionary shift to a prosperous KBE. At a time when citizens' expectations of government services are exceptionally high due to technological advancements, globalisation and the high accessibility of information, the public sector must keep up with rapid technological and cognitive changes and developments. It is no longer merely an act of providing a passable service, as citizens are acutely aware of the fast feedback cycles and service quality standards, such as convenience, ease of use, and swift response times, to which they have become accustomed from private sector interactions. Innovation's tools and methodologies are some of the many options local governments can utilise to expedite developments and progress to keep pace with citizens' demands.

Introduction

The overarching goal of governments and public institutions is to constantly seek improvements and positively impact the lives of their citizens. Faced with increased complexity and impact by global drivers, such as advancements in technology, globalisation, public demands, availability of resources, and social change, governments look to innovation to keep up to speed with changes in economies, to design and deliver efficient public services for greater societal impact in areas such as food security, environment, and health, and to foster further innovation in the private sector (Osman, 2015). Innovative governments drive societies towards a more sustainable and efficient knowledge-based economy (KBE) and help in fostering the achievement of “Agenda 2030” and the

17 Sustainable Development Goals (SDGs) attached to it. Highlighting the importance of innovation, the World Bank assigned a pillar to innovation systems as part of the four pillars on which a KBE is formed (Aubert, 2007).

In a bid to catch up with developed countries, Gulf Cooperation Council States (GCC) are striving to sustain themselves when the once-abundant resource wealth of hydrocarbons begins to deplete. As a means to decrease reliance on unsustainable oil-based economies, GCC countries are in the process of implementing their development plans and government visions to approach a KBE while making the most out of knowledge creation and transfer to foster increased levels of innovation.

“The socio-economic development of the country depends directly on the innovative technological potential and on the effectiveness of the state’s stimulation of its development at all levels of the national economy. The state, in all available ways, should encourage economic actors to develop and implement innovations, thereby creating favourable conditions for [innovation] ... This behavior will also strengthen the position of public authorities” (Papcunová et al., 2018, p.8).

However, despite all GCC countries being classified as high-income, and scoring in the highest category on the Human Development Index (HDI), a rough indicator of a nation’s progress towards the UN’s SDGs (Conceição, 2019), all GCC countries have fallen below the expected levels of innovation on the Global Innovation Index (GII) as per their level of development. Translating some of the notable gains GCC states have made in the economic

sphere into improvements in the public administration utilising innovative techniques and tools remain limited.

As an imperative part of their future progress towards a KBE, this paper will explore a set of questions. Mainly, what are the underlying reasons why GCC countries are low innovators? More specifically, how are institutional capacities in these countries contributing to below expected



levels of innovation output, and what appropriate methods can be implemented locally to increase institutional efficiency that would result in higher levels of innovation outputs while paving a path to the social and economic prosperity of a KBE?

The paper begins by portraying the challenges that all countries, including the GCC, are facing due to the complexities arising from the volatile nature of global events. To alleviate the complex set of challenges and decrease their reliance on non-sustainable assets to finance the economy at large, countries, including the drive from the GCC as based on their visions, need to move towards a KBE. One of the four pillars of the KBE is a country's ability to innovate and develop new technologies. However, it is important to distinguish between innovation and change, as innovation is the process of implementing new ways of performing tasks or adopting new knowledge. In addition, two attributes of innovation are the positive and observable change in quality of processes and the deliberateness of said change (Staroňová et al., 2010).

Using the GII as a metric, it is illustrated that GCC countries do not have the required inputs or expected outputs for innovation and are on the decline. This is further corroborated through the effectiveness and efficiency of GCC governments as a metric of institutional capacities, a key innovation input pillar problem area. To improve government effectiveness and efficiency, innovation is required at the public sector level. One form of public sector innovation that breaks the barriers to innovation is the utilisation of public sector innovation (PSI)

labs. The paper concludes by highlighting the issues of empirical measurements of public sector innovations due to the complexities that do not exist in the private sector.



Methodology

The first phase of the research involved extensive exploratory desk research, utilising both journal articles and international publications to identify the current state and underlying reasons for low levels of innovation in GCC countries. The initial research highlighted the need to further investigate the institutional capacities of GCC countries as inputs to the innovation environment.

The paper uses secondary data sources from internationally accredited institutions, such as the World Bank, the UN, Cornell University, INSEAD, and the World Intellectual Property Organization, among others, that use statistical data to develop country rankings, such as the GII, the HDI and the World Governance Indicators (WGI). The rankings and indicators were used to assess the current innovation environment of

GCC countries due to their similarities in high income yet low innovation levels.

A clear data gap exists on measuring public sector innovation empirically, as data are available for Europe, the UK and Australia only. No such data exist for the GCC, where public sector innovation publications utilise anecdotal case studies to illustrate country-level success stories. Measures are typically based on subjective and self-adopted metrics, such as levels of public service citizen satisfaction data (Bloch and Bugge, 2013). The reason for the lack of empirical data is due to the fact that, unlike businesses, the government does not have a market, whereby altering “both the incentives for innovation and the methods for measuring innovation outcomes compared to the business sector” (OECD, 2018, p.60).

Results and discussion

The public administration is facing a mounting level of challenges to deliver its mandates efficiently and effectively. This is due to the rapidly changing working procedures, tools and mechanisms of attending to fast-paced citizen’s needs. Torfing and Triantafillou (2016) clearly state that there is an “unlimited need to increase public service productivity, effectiveness, and efficiency” and, based on this, many countries are believed to be in need of innovation in their public administration. An additional, and increasingly relevant, argument for the urgent need of a machinery of government that is

capable of dealing with the unpredictable and complex public realities of the 21st century are issues relating to trust, legitimacy and ultimately stability (Smith, 2017, p.4).

Due to globalisation, the GCC is faced with complexities arising from the volatile nature of world events and developments that are beyond its control. One such instance is its large reliance on hydrocarbon exports, a key GCC resource denoted by oil prices, directly impacting its fiscal policies. Specifically, “the qualitative response of fiscal policy to



fluctuations in hydrocarbon revenues has been broadly consistent with the statistical properties of oil price shocks” (Beidas-Strom et al., 2011). Problematically for the GCC, the global move towards renewable energy is causing a change in the demand for hydrocarbon exports to increased levels of uncertainty; this, in turn, directly impacts fiscal policy responses.

“There is an increasing recognition among governments and international organizations of the importance of mobilizing research, higher education, and innovation, as part of wider strategies for socio-economic development” (Pellini et al., 2019, p.12) Aware of the imperative need of becoming knowledge-based economies,

GCC countries are aiming to build a “highly competitive innovation ecosystem, empowering the nation, transforming the economy and inspiring the people” (Gackstatter et al., 2014). A KBE does not rely on resource-dependent assets; rather it offers boundless productivity gains (Osman, 2015). All GCC countries have currently undertaken national strategic plans to move further away from a reliance on oil-based economies that also emphasise the importance of innovative efforts in actualising the national visions. “A recurring theme across all these [GCC countries] national vision documents is a focus on improving the research, development, and innovation (RDI) ecosystem” (Akca et al., 2019).

- Bahrain’s Vision 2030, for instance, highlights its efforts towards “increasing levels of sophistication and innovation”, and improving institutional capacities through increasing government efficiency (EDB, 2008).
- In Kuwait’s Vision 2035, initiatives to increase the quality of public services using modern ICT solutions are included (Government of Kuwait, 2017).
- Through its Information Technology Authority (ITA) and as part of its Vision 2040, Oman has developed a specific strategy for the digitisation of its public sector services through its smart government initiative in an effort to modernise the delivery of its services to citizens (Supreme Council for Planning, 2019).
- Qatar’s National Vision 2030 plans to improve the living standards of its citizens by heavily investing in its technological infrastructure to increase government effectiveness and move towards becoming a digital economy (General Secretariat for Development Planning, 2008).
- Saudi Arabia highlights the need to develop a sophisticated digital infrastructure in an effort to provide a higher quality of public services in its Vision 2030 (Council of Economic and Development Affairs, 2016).
- The UAE’s 2021 vision identifies their drive to become a major smart city through the provision of smart services for its citizens (Ministry of Cabinet Affairs, 2010).

There is clearly no shortage of visions from GCC countries identifying the importance of innovative efforts within government as a means of moving towards a KBE and improving the lives of citizens. However, even the most meticulous development plans can be easily thrown off course as it requires flexibility and adaptability through innovation to make the most of newly emerging economic and social

opportunities. A recent report by the McKinsey Center for Government (MCG) captured this struggle succinctly when it stated that their “research has revealed that only 20 percent of large-scale government change efforts fully succeed in meeting their objectives. There is no shortage of bold government visions; the challenge is how to translate those visions into reality” (Allas et al., 2018).

“Innovation, which depends on a strong research community as well as strong interactions between ideas and technologies, is about turning ideas into products and services of use to society. Citizen knowledge emerges from society’s experiences and practice. It is the social capital that allows individuals to become citizens and form communities” (Pellini et al., 2019, p.14).

The GII is a conceptual framework measuring innovation for all countries’ economies, utilising both quantitative and qualitative measurements from international sources to “capture the multidimensional facets of innovation and provide tools that can assist in tailoring policies to promote long-term output growth, improved productivity and job growth” (Cornell University, INSEAD, & WIPO, 2019). Innovation is a pillar in moving towards a KBE. According to a report published by the Asian Development Bank, knowledge-based economies “require productivity-led growth arising from innovation”. It clearly states that (KBE) “is both an imperative

and an opportunity for developing” (2014, p.XV). Due to the difficulty associated with measuring innovation output and impact, the GII measures the relative climate and infrastructural readiness for innovation on a country level and assesses its innovation outputs through seven pillars. The pillars are indications as to why GCC countries are not as innovative as their international counterparts by pinpointing specific problem areas. The input pillars are institutions, human capital and research, infrastructure, market sophistication, and business sophistication; the output pillars are knowledge and technology outputs, and creative outputs.





Table 1 shows a breakdown of GCC countries with respect to their GII rank, input pillars, and output pillars. The highest rank for all areas is 1 and the highest score for all areas is 100.

Table 1: GCC GII Ranks and Scores

Country	GII		Institution		Human Research and Capital		Infrastructure		Market Sophistication		Business Sophistication		Knowledge and Technology Output		Creative Output	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Bahrain	78	31.10	54	66.0	85	24.4	45	51.6	79	45.3	83	27.1	92	15.9	83	22.8
Kuwait	60	34.55	90	55.6	81	22.5	53	50.2	41	53.5	100	24.7	52	25.2	56	29.2
Oman	80	30.98	69	61.5	35	43.3	48	51.3	78	45.5	107	23.8	112	12.3	88	21.5
Qatar	65	33.86	53	66.2	70	28.9	28	58.0	82	44.7	67	30.2	80	18.4	70	25.8
Saudi Arabia	68	32.93	104	51.3	29	45.5	55	48.9	47	51.9	48	34.3	87	17.0	86	21.9
UAE	36	42.17	28	78.8	18	52.4	21	59.4	34	56.1	30	41.5	63	22.2	50	31.2

Source: Global Innovation Index, 2019

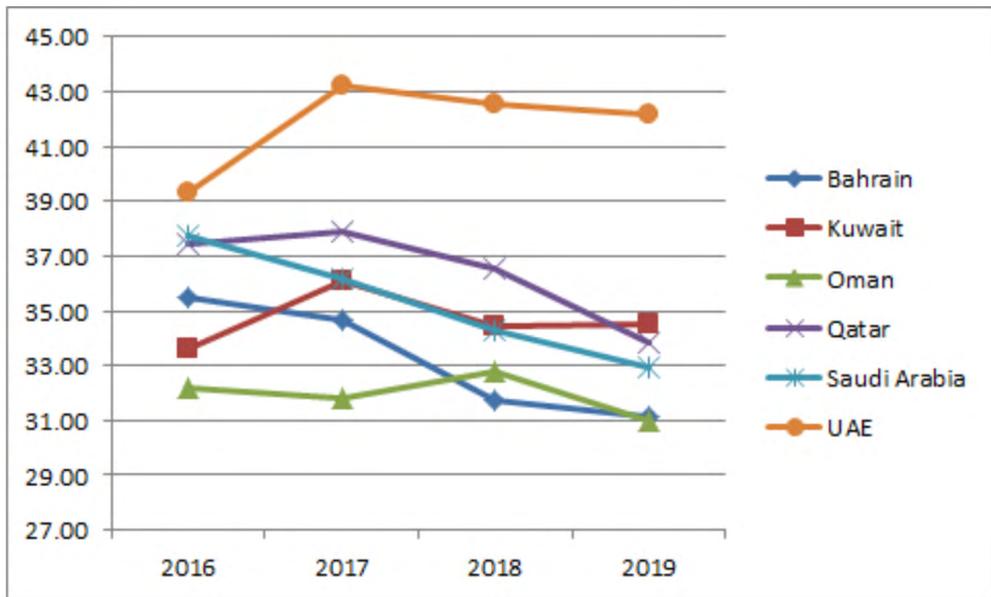


Figure 1: Historical GCC GII Scores, 2016 - 2019

Source: Global Innovation Index, 2016-2019

With the exception of the United Arab Emirates (UAE), all GCC countries in Table 1 indicated an income group weakness in the institutions pillar for the majority of its sub-indices. Bahrain has additional income group weaknesses in its human capital and research input pillar, its market sophistication input pillar, its business sophistication input pillar, and both output pillars. Saudi Arabia has additional income group weaknesses in its infrastructure pillar and both output pillars. Qatar has income group weaknesses in all its input and output pillars, except for its infrastructure pillar indicating a strength. Kuwait has additional income group weaknesses in its infrastructure pillar and indicates a strength in its market structure pillar. Oman has additional income group weaknesses in its market sophistication pillar, its business sophistication pillar and both its output pillars. The UAE is an outlier and notable mover in the GCC, ranking 36th globally and 3rd in top innovation economies in the Northern Africa and Western Asia region. However, despite its rank, it still performed below levels of expectation for development in high-income countries, and attained a low level of output similar to its GCC counterparts even with evidently higher innovation inputs (Cornell University, INSEAD, & WIPO, 2019).

Overall, it is abundantly clear that most GCC countries require significant improvement in most, if not all, input and output pillars, notably their institutional capacities, as they rarely indicate overall strength, even within their respective income groups. "From an institutional point of view, few of the many promises have been fulfilled by the six-member states. Much

remains to be done both in the political and economic field" (Legrenzi, 2016). As shown in Figure 1, historical trends also reveal a downward trend in terms of innovation rankings for most GCC countries, while the UAE had a slight jump in 2017, which stagnated. Therefore, the GCC countries' visions have yet to translate into tangible results in terms of innovation in general and public innovation in particular. In a comparative study between GCC states and two silk road countries, namely Italy and China, Bakry and Bakry (2019) pointed out that the GCC states can increase their competitiveness and enhance their innovation ranks through some potential cooperation with these two countries located on either end of the silk road. Examples given, for instance, were related to patents and data indicators concerned with ICT business model creation.

As the focus of this paper, institutional capacities are necessary for the success and progress of innovative efforts in all societal sectors. Not only is the value of good institutional capacity important for country-level innovation, it also helps governments become more effective and efficient when providing services to its citizens and in mitigating risks in areas such as economic, political and national shifts. With the current hyper-shifts in the social and economic environment, governments will have to be agile to help regulators and legislators adapt without hindering innovation efforts (Schwab, 2017).

The World Bank's Worldwide Governance Indicators are the leading source of world government effectiveness ranks and scores. This index:



“reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies” (Cornell University, INSEAD, & WIPO, 2019).

Government effectiveness has a significant impact on the population’s overall well-being, and further promotes a climate for innovation in all areas of the economy (Garcia-Sanchez et al., 2013).



<https://govdata360.worldbank.org/indicators/h580f9>

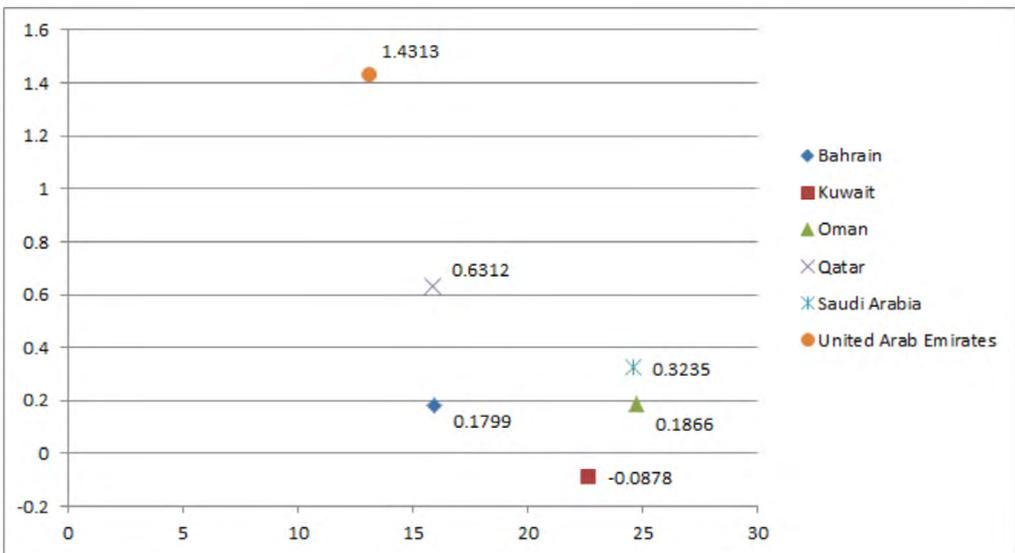
Y-axis - Government Effectiveness Values, Source: Worldwide Governance Indicators

Figure 2: Government Effectiveness, Value

Source: Worldwide Governance Indicators. Available at: https://govdata360.worldbank.org/indicators/h273bb432?country=BRA&indicator=388&viz=line_chart&years=1996,2019

As shown in Figure 2, with the exception of the UAE and Qatar, all countries indicated an income group weakness in government effectiveness, a factor of institutional capacity (Appendix I). Figure 3 below shows the historical trend of government effectiveness within the GCC (complete historical data are available in Appendix II). The index ranges from -2.5 (weak) to 2.5 (strong). The UAE is the only country within

the GCC to surpass the high-income country median value from 2012. All other countries fall below the median. Problematically, Qatar, Bahrain, Kuwait, and Oman follow a downward trend, while Saudi Arabia has been experiencing an upward trend towards the values of Bahrain and Oman. Kuwait has the lowest value among its GCC counterparts.



X-axis - General government final consumption expenditure (% of GDP). Source: World Bank
 Y-axis - Government Effectiveness Values, Source: Worldwide Governance Indicators

Figure 3: Levels of GCC Government Efficiency, 2019



By comparing government effectiveness values with the expenditure rate of government consumption as a percentage of its gross domestic product (GDP), levels of government efficiency of GCC countries can be determined. Government efficiency, therefore, relates the effectiveness of GCC governments to their respective resource and expenditure levels. Figure 3 illustrates the relationship between these two metrics. Additional data point towards higher effectiveness values and lower levels of government consumption as a percentage of GDP (further towards the top left corner of the graph). The UAE has the highest level of government efficiency in the GCC due to obtaining the highest levels of effectiveness and lowest levels of government expenditure as a percentage of GDP amongst all its GCC counterparts. Both Qatar and Bahrain have the second-lowest expenditure rates, yet Qatar's government effectiveness is at a higher value than Bahrain's. Kuwait has the lowest levels of government effectiveness in the GCC and a higher level of government consumption than Bahrain, Qatar, and the UAE. At approximately double the levels of government consumption of the UAE, Saudi Arabia, and Oman performed significantly worse in terms of government efficiency, where Saudi Arabia is slightly higher than Oman's levels and Oman is on par with Bahrain's

government effectiveness levels. Bowman and Kearney (1988) stated that the performance of a political system "depends to a great extent on institutional capacity". This is illustrated in the case of the three GCC countries' datasets, where there is a positive correlation between levels of government efficiency, effectiveness, and institutional capacity.

The GCC public sector plays a key role as a regulator, service provider and employer in the economy, accounting for over 30% of GCC employment due to its significant asset base. Therefore, its efficiency and effectiveness are strong drivers "for economic growth through its support for and governance of the private sector" (Hollanders et al., 2013). Although traditionally innovation and efficiency have been synonymous with private sector growth and sustained development, governments have begun to realise that innovation in the public sector can be utilised as one of the solutions to a diverse array of issues. Governments have begun to increasingly realise that to solve 'wicked' problems, new dynamic toolkits are required (Kattel and Mazzucato, 2018). Innovation in the government sector may now be a way of optimising the use of resources in order to improve the efficiency of public services and address societal challenges, such as climate change, social and economic inequality, demographic pressures, future

austerity measures, and population growth (Torfing and Ansell, 2017). It is “an important enabler for public sector modernisation and smart public administrations are a key asset to spur ... innovation potential” (Bason et al., 2013).

As defined by the European Commission, innovation in the public sector is “the process of generating new ideas and implementing them to create value for society, covering new or improved processes (internal focus) and services (external focus)” (Bason et al., 2013). Public sector innovation’s main focus is furthering the quality of life of citizens rather than safeguarding governmental bureaucracy, where value creation can be actualised through the forms of services, social outcomes or trust (Kelly et al., 2002). As a relatively new field, public sector innovation is evolving and currently encompasses a broad range of innovative tools, practices, and efforts to change and innovate key elements of public administration services such as “smarter procurement, mobilising new forms of innovation financing, creating digital platforms and citizen-centric services as well as driving a new entrepreneurial culture among public managers” (Bason et al., 2013). It also deters from siloing its efforts by collaborating with the private sector and non-governmental organisations (NGOs). Inspired by Silicon Valley process design, public sector innovation utilises short cycles of design, development, testing, and evaluations to prove the viability of innovations rather than through the traditionally longer cycles of research and analysis based policy planning.

Encompassing a multitude of innovation types, public service innovation can be segmented into service, service delivery, administrative and organisational, conceptual, policy or systemic types of innovation (Windrum, 2008). Service innovations include developing new or improving on current service offerings. Service delivery innovation improves the public sector’s service delivery effectiveness and interactions with service users. Administrative and organisational innovations involve improvements to the back-end of developing and delivering public services. Conceptual innovation challenges the assumptions of current service offerings through the use of updated views of citizens’ needs, but does not indicate the implementation of new policy; rather, it is a rehashing of the current public administration strategy. Policy innovation includes the development, assessment or implementation of new policies at all scales. Systemic innovations involve improvements to the interaction of government entities with other organisations (Windrum, 2008).

Governments are not immune to innovation barriers. National differences in public sector governance, work organisation, national culture, and other internal conditions can dictate innovation capacities (Arundel et al., 2015). A Kaasa and Vadi (2010) study assessing the impact of national culture on innovation levels found that four of Hofstede’s cultural dimensions were correlated with multiple innovation indicators. A positive correlation was found among firm innovation outputs and individualism, while a negative correlation



was generally present for the power distance, uncertainty avoidance, and masculinity dimensions. Analysing Hofstede's cultural dimensions for GCC countries, high similarities are visible for all data points. As portrayed in Figure 4, all GCC countries have high levels of power distance and uncertainty avoidance, average levels of masculinity, and low levels of individualism. It can be determined that the GCC has a regional culture that negatively impacts innovation levels and is therefore detrimental to public sector innovation. Public policies in any country can also directly affect the internal direction of government and administrative work

in public sector institutions, through a specific strategic management approach to innovation, or by strengthening organisational innovation capabilities (Arundel et al., 2019, p.793). In addition, stringent regulatory environments, strong bureaucracy, management aversion to risk, lack of innovation leadership, and limited knowledge of the application of innovative processes and methods are all obstacles to innovation that are typically more prominent in the public sector when compared to the private sector, including in GCC countries (Arundel et al., 2015).

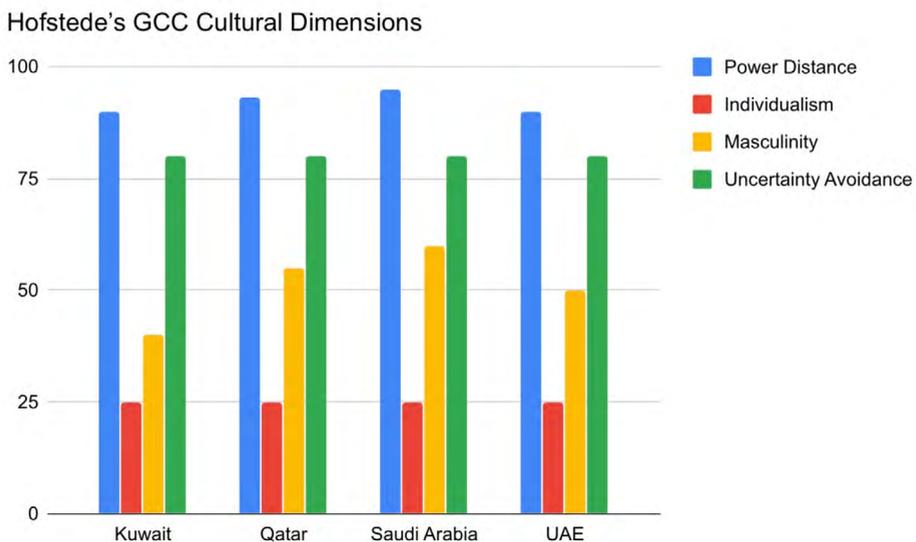


Figure 4: Hofstede's GCC Cultural Dimensions

Source: Hofstede Insights, Bahrain and Oman data unavailable.

In hopes of alleviating the barriers to innovation in the public sector, a systemic approach is required (OECD, 2018). Successful PSI efforts require a dedicated top-down mandate, infrastructural and human resources, methods and a large network (OECD, 2015). These efforts are institutionalised by developing PSI labs that have explicit authority to create change. The use of innovation labs at an institutional level along all levels of government allows countries to efficiently and effectively adapt to the aforementioned challenges. PSI labs are a means for governments to respond to a slew of increasingly complex policy problems (McGann et al., 2018). PSI labs can identify and inform of policy problems through research, generate potential solutions to policy issues, test potential solutions through trial and error, decide on potential solutions, scale solutions, and monitor and evaluate innovation efforts (McGann et al., 2018). The labs involve all stakeholders in the design process and ensure that the input of end-users are central to the derived solutions. Specifically, PSI labs use an “experiment-oriented approach to policy design” (Puttick et al., 2014), typically working with a large degree of autonomy separated from the rest of the public sector in dedicated spaces (Schuurman and Tönurist, 2016).

Innovation labs provide a base to also develop new services rather than just redesigning existing ones, improving long-term outcomes for citizens and residents, and allowing individuals across professional and sectoral divides to collaborate (Bazalgette and Craig, 2017). The OECD (2017) identified governance, methods, actors, impact and aims as the five elements to having successful innovation labs. Reflecting

on innovations in the UAE public sector, the World Government Summit (2017) reported the importance of the government’s commitment to embracing public sector innovation as a key success factor. It also points to the value of top-down leadership support and facilitation of resources to fully implement innovative ideas, thereby benefitting relevant stakeholders and cutting costs (World Government Summit, 2017).

Currently, active PSI labs in the GCC are located in the UAE and Qatar, while Bahrain is in the process of establishing the first local lab through the partnership of the Bahrain Institute of Public Administration (BIPA) and the United Nations Development Programme (UNDP). Oman, Saudi Arabia, and Kuwait currently do not have PSI labs. Through the success of other countries’ implementation of PSI labs, such as Denmark’s MindLab, Chile’s Laboratorio de Gobierno and France’s Futurs Public, the rest of the GCC should also prioritise public sector innovation by adopting labs.

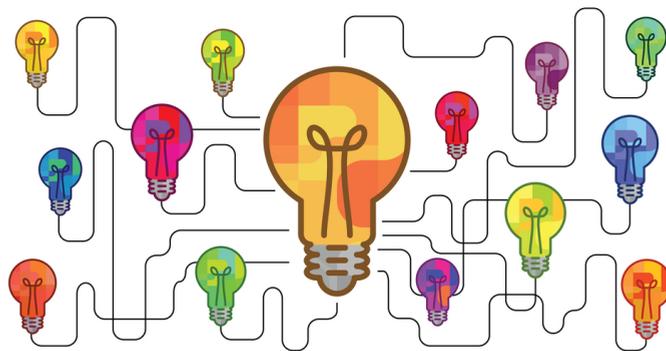
Under the vision of HH Sheikh Mohammed Bin Rashid AlMaktoum, the Vice President of the UAE, Prime Minister and Ruler of Dubai, the UAE aims to become one of the most innovative governments in the world. In line with that vision, the Mohammed Bin Rashid Centre for Government Innovation was established to prioritise and develop an innovation culture within the public sector. The centre aims to create and test innovation locally, regionally and internationally through hosting innovation labs. It aims to enable public sector employees by building capacities through training programmes, toolkits and public sector innovation diplomas. The centre also promotes public sector innovation



through partnerships with respected global organisations for knowledge-sharing, such as the UK's NESTA, and through the creation of a global innovation council of leading experts in sharing best practice. There are no empirical measurements of the said impact, but cases of service improvement are available, such as the UAE Star Rating, where a rating scale is assigned to each institution delivering public services to the society to assess service quality. Both Oman and the UAE have independent innovation visions for their countries. Bahrain has recently completed the second cycle of its public sector innovation awards, aimed at highlighting its commitment to government innovation. Public sector innovation efforts such as the successful implementation of the eGovernment system are visible, yet systemic processes and methods to public sector innovation have not been implemented.

Measuring public sector innovation empirically, a means of monitoring and evaluation is complex, raising more problems than solutions (Kattel et al., 2013). As a result, a limited number of frameworks have been developed by countries in the European Union and Australia to measure success rates of public sector innovation within

their respective countries. At the forefront of measuring public sector innovation, a few popular methods of measurement have been developed, each with their benefits and drawbacks. These popular methods have mostly been survey-based and are developed by adapting measurement methods used to assess innovation in the private sector to the public sector (OECD, 2019). The popular methods are the Oslo Manual, Measuring Public Innovation in Nordic Countries (MEPIN), the Australian Public Sector Innovation Indicators Project (APSII), the National Endowment for Science Technology and Arts – United Kingdom (NESTA UK), and the European Public Sector Innovation Scoreboard (EPSIS). Currently, there is no internationally standardised framework for measuring public sector innovation capacities in countries globally. As a result, GCC public sector innovations could not be measured or compared empirically; rather government efforts towards public sector innovation are highlighted. It is therefore important to note that the lack of empirical data for measuring public sector innovation in the GCC is a significant problem that needs to be resolved to allow governments and external constituents to monitor and evaluate innovation efforts.



Conclusions and recommendations

To move towards a KBE, GCC countries must improve scores along all innovation pillars, especially those pertaining to building institutional capacities: weaknesses were prominent for most countries. Using innovation to increase institutional capacity better the lives of citizens, and adapts countries to risks from global drivers and phenomena. “By introducing innovations in the process of providing services, public administration seeks, on the one hand, to bring citizens better services for them and, on the other, to more effectively manage allocated financial resources” (Papcunová et al., 2018, p.7). Bettering lives leads to innovation snowballing in other areas of the economy. “The economic development of a country (state) depends on the institutional environment, in which it operates, and is both an object of its influence and a subject that causes its transformation” (Dudchenko and Vitman, 2018, p.146).

Government efficiency and effectiveness, a metric in building institutional capacity, was also weak for most GCC countries and steps/assessments should be taken to further improve said scores. Public sector innovation is one of the ways that the government can improve its capacities. Through the implementation of PSI labs, governments in the GCC can possibly overcome internal barriers to quickly improve services for stakeholders and lead to further innovation in other economic sectors.

Much of the research on innovation is on a country level, both through journal articles and international publications. There is a very limited

amount of research done in terms of measuring innovation in the public sector (Bommert, 2010) including for the GCC, as even regional publications refer to innovation outside the Middle East and North Africa (MENA) region through anecdotal country-level success stories, further identifying a significant research gap.

This paper recommends that GCC governments utilise PSI labs as one of the means of rapidly improving public sector processes and services to, in turn, progress from its current rentier state into a KBE. In addition, significant data gaps are present in measuring public sector innovation, and further primary research is needed to fill the current gaps, leading to a more transparent and comparative understanding of successes and problem areas in country-level public sector innovation.

It is noted that there are experiences, albeit limited, in some GCC countries that can be built upon and developed to better utilise their capabilities in developing work in the public sector, and in keeping with the various challenges that enable their residents and decision-makers to overcome them in new innovative ways. Contributions from various partners, especially consumers of government services, should not be overlooked at any stage of initiating innovation-based solutions or premises such as PSIs. It is also recommended that GCC governments cooperate among themselves, given their commonalities economically, socially, politically and culturally, through sharing lessons learned and best practices to further expedite the collective regional transition towards sustainable KBEs.



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Biography

Ali S. Saleh has about 20 years' experience in sustainable development at the United Nations. He joined the United Nations Development Programme (UNDP) office in Bahrain in 2002 as an analyst for development programmes. Currently, he leads the portfolio of social sector and government efficiency, responsible for managing joint projects with the Government of Bahrain in the social sector, administrative efficiency, youth, health and education, and overseeing communication with the local and international press.

With his passion to enhance national and regional capacities within the Arab states, he drafted several reports and research papers in numerous areas of interests, mainly on pro-youth policies, efficiency and innovation in the public sector, and social development.

He is currently pursuing his PhD in "Environment and Sustainable Development" at the University of Bahrain, where his thesis focusses on the "Blue economy" as a pathway to diversifying the economy in Bahrain as an island state.

Appendix I

Scores and Rankings of Institutions of the GCC Countries

BAHRAIN

		Score/Value	Rank	
INSTITUTIONS		66.0	54	◇
1.1	Political environment	57.4	60	◇
1.1.1	Political and operational stability*.....	70.2	61	◇
1.1.2	Government effectiveness*.....	51.0	60	◇
1.2	Regulatory environment	73.5	39	●
1.2.1	Regulatory quality*.....	53.1	53	◇
1.2.2	Rule of law*.....	58.2	44	◇
1.2.3	Cost of redundancy dismissal, salary weeks.....	13.6	51	
1.3	Business environment	67.1	75	◇
1.3.1	Ease of starting a business*.....	89.6	56	◇
1.3.2	Ease of resolving insolvency*.....	44.6	83	◇

OMAN

		Score/Value	Rank	
INSTITUTIONS		61.5	69	◇
1.1	Political environment	61.3	49	◇
1.1.1	Political and operational stability*.....	80.7	35	◇
1.1.2	Government effectiveness*.....	51.6	57	◇
1.2	Regulatory environment	55.5	97	◇
1.2.1	Regulatory quality*.....	53.2	50	◇
1.2.2	Rule of law*.....	57.8	45	◇
1.2.3	Cost of redundancy dismissal, salary weeks.....	n/a	n/a	
1.3	Business environment	67.6	72	◇
1.3.1	Ease of starting a business*.....	92.9	34	●
1.3.2	Ease of resolving insolvency*.....	42.3	88	◇

SAUDI ARABIA

		Score/Value	Rank	
INSTITUTIONS		51.3	104	◇
1.1	Political environment	53.2	70	◇
1.1.1	Political and operational stability*.....	54.4	111	○
1.1.2	Government effectiveness*.....	52.5	55	◇
1.2	Regulatory environment	60.7	80	◇
1.2.1	Regulatory quality*.....	41.9	71	◇
1.2.2	Rule of law*.....	49.0	56	◇
1.2.3	Cost of redundancy dismissal, salary weeks.....	23.7	99	◇
1.3	Business environment	40.0	129	○
1.3.1	Ease of starting a business*.....	80.1	107	◇
1.3.2	Ease of resolving insolvency*.....	0.0	129	○

KUWAIT

		Score/Value	Rank	
INSTITUTIONS		55.6	90	◇
1.1	Political environment	49.4	85	◇
1.1.1	Political and operational stability*.....	63.2	86	◇
1.1.2	Government effectiveness*.....	42.5	83	◇
1.2	Regulatory environment	57.0	92	◇
1.2.1	Regulatory quality*.....	40.3	73	◇
1.2.2	Rule of law*.....	49.1	55	◇
1.2.3	Cost of redundancy dismissal, salary weeks.....	28.1	113	○
1.3	Business environment	60.3	105	◇
1.3.1	Ease of starting a business*.....	81.4	101	◇
1.3.2	Ease of resolving insolvency*.....	39.3	101	◇

QATAR

		Score/Value	Rank	
INSTITUTIONS		66.2	53	◇
1.1	Political environment	67.6	40	◇
1.1.1	Political and operational stability*.....	73.7	50	◇
1.1.2	Government effectiveness*.....	64.5	39	◇
1.2	Regulatory environment	68.1	62	◇
1.2.1	Regulatory quality*.....	53.2	51	◇
1.2.2	Rule of law*.....	65.5	35	◇
1.2.3	Cost of redundancy dismissal, salary weeks.....	23.2	97	◇
1.3	Business environment	62.9	91	◇
1.3.1	Ease of starting a business*.....	87.7	68	◇
1.3.2	Ease of resolving insolvency*.....	38.1	104	◇

UAE

		Score/Value	Rank	
INSTITUTIONS		78.8	28	
1.1	Political environment	80.5	20	
1.1.1	Political and operational stability*.....	80.7	35	
1.1.2	Government effectiveness*.....	80.4	19	
1.2	Regulatory environment	84.2	24	
1.2.1	Regulatory quality*.....	69.1	32	
1.2.2	Rule of law*.....	67.5	34	
1.2.3	Cost of redundancy dismissal, salary weeks.....	8.0	1	●◆
1.3	Business environment	71.9	58	
1.3.1	Ease of starting a business*.....	94.1	22	
1.3.2	Ease of resolving insolvency*.....	49.7	67	

Source: Global Innovation Index



Appendix II

Government Effectiveness Historical Indicator

Country	Indicator	Units	1996	1998	2000	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bahrain	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	0.7766	0.6030	0.5289	0.5123	0.4018	0.5461	0.3770	0.3957	0.4090	0.3868	0.4806	0.4549	0.5207	0.5498	0.5389	0.6100	0.5198	0.3278	0.1939	0.1779
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1864	0.2139	0.2003	0.1887	0.2016	0.2335	0.2405	0.2126	0.2270	0.2218	0.2202	0.2154	0.2348	0.2359	0.2219	0.2450	0.2489
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	5.0000	4.0000	5.0000	5.0000	5.0000	5.0000	5.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	6.0000
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	77.0482	74.0933	72.8205	70.9184	68.8773	70.9350	65.6865	68.8293	66.9903	66.3049	67.9426	67.9426	68.7204	69.6882	70.1422	72.9862	73.0769	65.8654	61.0877	58.6154
	Government Effectiveness, Lower	in percentile rank terms	62.7596	62.1762	62.5641	63.2653	62.7551	65.0246	57.8413	56.0976	53.8835	55.3398	58.3732	57.4163	60.6635	60.6635	61.6134	60.1769	60.0962	50.9615	44.2308	45.6731
	Government Effectiveness, Upper	in percentile rank terms	81.6066	82.3814	82.0513	78.0612	73.5510	78.8137	72.0588	74.8341	77.6499	72.0484	75.9861	75.9861	76.7273	76.3033	77.7251	76.4423	76.4423	71.0569	70.0569	70.0569
Kuwait	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	0.1159	0.0619	-0.0835	0.1073	0.1240	0.1059	0.1745	0.2872	0.0997	-0.0073	0.2022	0.1686	0.2046	0.2703	0.2707	0.1484	-0.0332	0.1635	-0.1746	-0.0878
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1984	0.2307	0.2468	0.1887	0.1958	0.2243	0.2327	0.2126	0.2270	0.2218	0.2202	0.2154	0.2344	0.2359	0.2219	0.2245	0.2276
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	4.0000	3.0000	3.0000	5.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	59.0164	55.9585	53.8462	61.7347	62.7551	61.5764	60.2941	65.4146	56.5107	55.8252	60.7655	60.7655	55.9242	61.6588	62.6066	67.1154	52.8846	48.5577	46.1538	49.5192
	Government Effectiveness, Lower	in percentile rank terms	49.7268	48.8601	46.9231	49.9798	49.4694	46.7980	50.4902	55.1220	46.1165	42.2320	49.2823	47.3684	48.6019	40.2844	40.2844	32.2111	39.4231	35.5769	32.2115	35.5769
	Government Effectiveness, Upper	in percentile rank terms	64.4809	64.2487	65.6410	67.8371	70.9184	69.9507	68.1373	70.7917	67.4757	66.0194	69.8565	68.8995	65.8768	62.5992	62.5992	65.8654	61.5385	60.0962	63.9423	
Oman	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	0.4394	0.4494	0.3149	0.3918	0.4907	0.4840	0.3262	0.3233	0.3355	0.4935	0.3839	0.3779	0.3212	0.3645	0.3141	0.3630	0.0924	0.1919	0.1929	0.1864
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1984	0.2307	0.2468	0.2097	0.2651	0.2315	0.2405	0.2137	0.2298	0.2218	0.2202	0.2154	0.2348	0.2351	0.2252	0.2493	0.2525
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	4.0000	3.0000	3.0000	4.0000	4.0000	5.0000	5.0000	6.0000	6.0000	7.0000	7.0000	7.0000	7.0000	6.0000	5.0000	5.0000	
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	65.5738	70.4663	65.1282	66.8367	70.9184	69.9507	63.2353	64.3902	64.5631	66.9903	66.0287	66.0287	62.5592	61.6114	61.1374	63.9423	55.7692	61.5385	60.5769	60.0962
	Government Effectiveness, Lower	in percentile rank terms	59.5628	59.5655	55.5335	60.1041	62.2491	61.0857	55.9922	62.6829	52.4272	56.3107	56.4935	55.5024	50.7109	51.1848	48.3412	48.0769	42.7885	46.6731	44.2308	45.6731
	Government Effectiveness, Upper	in percentile rank terms	75.4098	78.2385	75.8974	75.0000	73.5510	78.8137	72.0588	75.1219	74.7575	73.0485	75.2027	75.1196	70.6161	70.1422	69.9195	72.9962	69.2308	72.3962	70.0969	75.5377
Qatar	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	0.5564	0.4419	0.4029	0.4918	0.4907	0.5283	0.4240	0.5794	0.4441	0.6015	0.5615	0.6463	0.7540	0.8707	1.0377	0.9440	0.9649	0.7151	0.7405	0.8121
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1984	0.2307	0.2468	0.1976	0.2022	0.2315	0.2405	0.2101	0.2177	0.2298	0.2107	0.2079	0.2217	0.2227	0.2115	0.2143	0.2155
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	4.0000	3.0000	3.0000	4.0000	5.0000	5.0000	5.0000	5.0000	6.0000	7.0000	7.0000	8.0000	8.0000	8.0000	8.0000	8.0000	
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	70.4918	70.9845	70.2164	69.8878	70.9184	70.4434	66.1765	70.2439	67.4757	72.8155	78.4689	76.5550	74.4076	77.7251	81.0427	76.4423	77.4038	74.5192	74.5192	74.5192
	Government Effectiveness, Lower	in percentile rank terms	62.2951	59.5555	57.4359	62.7551	62.2449	62.0690	57.8451	61.9512	55.8835	61.1650	71.2919	67.9426	65.8768	69.6682	70.9279	72.5962	75.0769	67.7885	66.6269	65.4615
	Government Effectiveness, Upper	in percentile rank terms	78.1421	78.7565	80.0000	77.9400	73.5510	80.2956	73.0392	79.0244	77.6499	79.1262	86.6029	81.7321	82.4645	87.2018	89.6156	87.0192	87.0192	82.2115	82.2115	78.8462
Saudi Arabia	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	-0.1834	-0.2031	-0.2195	-0.3027	-0.3944	-0.3542	-0.3748	-0.1700	-0.1191	-0.0890	-0.0964	-0.0069	-0.3030	0.0100	0.0711	0.2077	0.1999	0.2613	0.2572	0.3235
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1864	0.2139	0.2219	0.2097	0.2321	0.2243	0.2327	0.2216	0.2270	0.2394	0.2302	0.2164	0.2348	0.2319	0.2206	0.2141	0.2152
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	3.0000	4.0000	4.0000	4.0000	4.0000	4.0000	4.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	7.0000	8.0000	8.0000
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	49.1803	50.2591	47.8923	45.9184	46.4286	45.8128	42.6471	49.7361	51.4563	52.9126	51.1962	55.3024	45.4975	48.2958	55.2938	61.0392	60.5769	65.4615	62.5000	64.9058
	Government Effectiveness, Lower	in percentile rank terms	36.0654	29.5357	28.7179	30.6122	28.5714	24.1378	27.4810	34.1463	36.4078	38.9350	39.7129	41.6268	27.4882	44.0758	41.4976	41.6791	40.0769	50.4808	50.0000	50.9615
	Government Effectiveness, Upper	in percentile rank terms	57.9235	61.1399	62.5641	56.6327	59.1817	57.6955	55.9922	63.9512	62.6214	65.0485	62.2010	65.5024	58.7678	64.4550	63.8768	72.3962	70.0969	70.0969	70.0969	
United Arab Emirates	Government Effectiveness, Estimate	range, -2.5 (weak) to 2.5 (strong)	0.7766	0.7941	0.7915	0.8465	0.8181	0.6960	0.7208	0.9489	0.9138	0.8766	0.9920	0.9900	1.0511	1.1498	1.1764	1.4313	1.5994	1.4519	1.4164	1.4811
	Government Effectiveness, Standard error	stdev	0.1739	0.2283	0.2469	0.1984	0.2307	0.1887	0.2001	0.2294	0.2386	0.2216	0.2270	0.2219	0.2129	0.2107	0.2078	0.2217	0.2200	0.2106	0.2133	0.2132
	Government Effectiveness, Number of data sources	Number	3.0000	3.0000	3.0000	4.0000	4.0000	4.0000	5.0000	4.0000	4.0000	6.0000	7.0000	7.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	8.0000	
	Government Effectiveness, Rank	percentile rank, 0 (lowest) to 100(highest)	77.0492	78.2385	79.4872	78.0612	72.4490	75.3695	72.5490	79.5122	79.1262	78.1553	79.4258	77.5120	81.9905	85.4121	81.4123	89.4211	91.8462	90.8654	90.8654	90.8654
	Government Effectiveness, Lower	in percentile rank terms	67.7596	69.4501	67.1795	70.4082	64.7959	67.9003	65.6863	71.2195	70.7878	67.4757	72.2480	68.8995	72.9858	73.4957	74.4076	81.7308	84.1346	81.2100	81.7308	
	Government Effectiveness, Upper	in percentile rank terms	85.6066	84.9741	86.1558	85.7143	79.5918	80.7882	80.9322	86.3415	87.5786	84.9515	87.5598	86.1244	87.6777	90.0474	90.5215	95.1933	90.0769	94.2308	94.7115	

Source: World Governance Indicators