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Public spending efficiency in the countries of the gulf cooperation council

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Abstract

Purpose – The Gulf Cooperation Council (GCC) countries have been increasingly investing in their economic and social development in recent years, yet the effectiveness of their spending remains unknown although they have been taking reforms to advance their spending efficiency practices.

Design/methodology/approach – The study applies a quantitative approach to analyze panel data using a multiple regression model based on the World Economic Forum (WEF) reports of the global competitiveness index (GCI) from 2009 until 2018.

Findings – The results show that policies' strength has a positive and significant influence, while national infrastructure and workforce empowerment have a negative and significant influence over the extent of spending efficiency implementation in the GCC countries.

Research limitations/implications – GCI disclosure assessment criteria changed in 2019 and then stopped in 2020 due to COVID-19. A different version of GCI was published in 2020, which focuses on recovering from the COVID-19 pandemic, and no other issues have been published since then. This represented a barrier to recent data collection.

Practical implications – Practical contribution is the value added by this study to a minimal literature on spending efficiency in the GCC countries. This study's theoretical contribution to knowledge is the integration of the new institutional sociology (NIS) perspective of institutional theory and the resource slack theory to investigate a set of factors rarely explored in relation to their impact on governmental spending efficiency.

Social implications – This study provides the following recommendations for policymakers: The GCC government should direct government training bodies and universities (in business majors) to include mandatory spending efficiency subjects to enhance current knowledge. Also, the governmental-related bodies of spending efficiency should make agreements with universities and research centers to improve the diverse R&D aspects of government spending efficiency. Another important recommendation is to enforce the adoption of the GRC concept regarding spending efficiency practices for governmental employees to guide them towards implementing spending efficiency practices.

Originality/value – This study's theoretical contribution to knowledge is the integration of the new institutional sociology (NIS) perspective of institutional theory and the resource slack theory to investigate a set of factors rarely explored in relation to their impact on governmental spending efficiency. Also, the practical contribution is the value added by this study to a minimal literature on spending efficiency in the GCC countries. The research has established empirical evidence to support the findings above.

Keywords Spending efficiency, GCC countries, Institutional theory, Theory of resource slack, Policies' strength, National infrastructure, Workforce empowerment

Paper type Research paper

1. Introduction

The Gulf Cooperation Council (GCC) governments have been increasingly investing in their economic and social development in recent years, yet the effectiveness of their spending remains a challenge (Annual Meeting of Arab Ministers of Finance, 2016; Building the foundations for economic sustainability, 2019; Economic Prospects and Policy Challenges for

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the GCC Countries, 2022; Ouertani *et al.*, 2018). GCC governments have been taking reforms (e.g. visions) to advance their spending efficiency (Building the foundations for economic sustainability, 2019). For instance, Saudi Arabia, the largest and wealthiest in the GCC countries, has saved over 106 billion in four years since 2016 (Alshammari, 2021). Four out of the six GCC countries were ranked among the top 10 in spending efficiency over 137 countries according to the Global Competitiveness Report (GCR) published by the World Economic Forum (WEF) in 2018 (Schwab, 2018). Although most GCC governments are progressing in spending efficiency reforms, two are behind. It is also important to note that GCC countries are oil-based economies. Hence, most of the recent spending efficiency studies in the Arab region were either focused on nonoil economies in the area, such as Brini and Jemmali (2016) or have focused on both oil and non-oil-based economies in the Arab region (Albassam, 2022). Arab oil-based economies (such as GCC countries) should be investigated separately from non-oil-based ones. This is because public subsidies are the primary cause of growth in GCC economies rather than taxation and private market participation (Espinoza, 2012). The study aims to theoretically contribute to limited literature in the field of public spending efficiency with an appropriate theoretical context, which examines contextual factors driven by related literature. Also, the study aims to fulfill the needs for such limited research in the GCC region, and it will provide recommendations for policymakers. This study's theoretical contribution to knowledge is the integration of the new institutional sociology (NIS) perspective of institutional theory and the resource slack theory to investigate a set of factors rarely explored in relation to their impact on governmental spending efficiency. Also, the practical contribution is the value added by this study to a minimal literature on spending efficiency in the GCC countries.

2. Literature review

The financial crisis of 2007 has initiated questions about the efficiency of government spending (Fonchamnyo and Sama, 2016). The concept of ideal government spending, first presented by Barro (1990), has been broadly accepted as the mainstream of thought. Corsetti and Roubini (1996) further advanced this concept by using a two-sector model to analyze the influence of public spending on productivity in the final goods and human capital accumulation industries. It is widely acknowledged that government spending on consumption, social welfare and investment can boost economic growth (Afonso *et al.*, 2005). Some authors have further suggested that such government spending can increase the competitiveness of economies by raising human capital and fostering research and creative endeavors (Schuknecht *et al.*, 2006; Zagler and Dürnecker, 2003). Also, it is essential to set a definition for governmental spending efficiency that differentiates it from spending cuts, as the earlier focuses on reducing spending without affecting the outcomes and quality of the services being provided to the public, while the latter is about minimizing spending regardless of the impact on the outcomes. This definition of governmental spending efficiency is consistent with the literature, such as the work of Chan *et al.* (2017) and Gupta and Verhoeven (2001).

In particular, few studies assessed the influence of oil-based economies on spending efficiency (Hamdi and Sbia, 2013; Dizaji, 2014). However, there is a scarcity of studies that directly investigate the factors that influence governmental spending efficiency in GCC countries. The following section discusses these studies.

Brini and Jemmali (2016) investigated the determents of governmental spending efficiency of eleven Middle East and North Africa (MENA) countries (Egypt, Algeria, Morocco, Libya, Tunisia, Djibouti, Syria, Iraq, Iran, Yemen, Jordan) over the period 1996–2011. The results mostly show that Jordan scored the highest in efficiency regarding governmental spending on administration, education and health, and Tunisia scored high on infrastructure; however, Algeria, Libya and Yemen are fairly less efficient in governmental

spending on administration and health. Furthermore, the results show that political stability, economic growth and trade freedom positively impact governmental spending efficiency. Nevertheless, accountability and voice negatively influence the efficiency of governmental spending. Notably, the study overlooked the Six GCC countries (that this study investigates), although they represent a major part of the MENA region and have the highest economic wealth and public budgets (Callen *et al.*, 2014; McKee *et al.*, 2017). Also, a study by Albassam (2020) recommended a model to estimate the efficiency of public spending and tested it on 71 countries from 1996 to 2017, including the Three GCC countries (Saudi Arabia, United Arab Emirates and Qatar). The model highlights public allocations' ability to reach government objectives (e.g. improving economic growth and controlling unemployment) and factors to sustainable development. The results indicate the reliability of the suggested model for explaining governmental spending efficiency. Another study by El Wahab (2021) investigated the spending efficiency of public health in the GCC countries but with a narrow focus on Kuwait from 2000–2017. The results illustrate that, on average, public spending in Kuwait's health sector is inefficient. The literature has examined different determents to gain a deeper understanding of the extent of spending efficiency among economies worldwide, including corruption, civil service capability, education, population size, income, protection of property rights, government size, voter turnout, political orientation (Afonso *et al.*, 2005; Schuknecht *et al.*, 2006; Hauner and Kyobe, 2010; Herrera and Ouedraogo, 2018; Antonelli and De Bonis, 2019). The most dominant determent is the policies introduced by Brooks and Manza (2006), who empirically provide evidence linking government policies and spending efficiency in terms of how policy preferences and their cross-national differences play an important role in shaping the welfare state by less spending and more outputs. The influence of government policies on spending efficiency is in line with Montes *et al.* (2019), who argue that embracing enhanced policies leads to government spending efficiency and effectiveness. Also, Batare (2012) stated that "public administration may be regarded as an institution affecting 'input', producing 'output' and having a major impact on the results of governmental policy, thus state administration may influence the efficiency and effectiveness of spending".

Nevertheless, other studies implied different characteristics that have the potential to influence spending efficiency, yet they need to be thoroughly investigated. Other perspectives of literature have suggested the private sector's influence on the efficiency of government spending, such as the work of Wang and Alvi (2011), who found a robust negative relationship between the private sector activities and government inefficiency in Organisation for Economic Co-operation and Development (OECD) and selected Asian countries, which indicates that increasing the portion of private activities in the economy increase the efficiency of public spending. Bovis (2013) argued that private sector participation with the public sector leads to several benefits, including efficiency gains, innovation, qualitative improvement, improved value-for-money and easier delivery of public services. However, the literature on private sector influence on public spending efficiency still needs to be improved, and further research should investigate this perspective.

Also, well-established infrastructure can facilitate more efficient trade and commerce and reduce transaction costs. For example, efficient transportation systems lessen the cost of transporting goods and people, leading to cost savings for government services that require transport. Arlt *et al.* (2001) show how investment in infrastructure can influence economic factors such as prices and land use, which can affect economic efficiency. Well-developed infrastructure related to education, healthcare and public transportation systems can make services more affordable and accessible to the public and government workforce, leading to better social outcomes and lower government expenditure. Rarasati and Iskandar (2017) emphasizes that "A sustainable infrastructure will cut down unnecessary costs, lost production costs, as well as decrease energy consumption, waste and pollution". This is

supported by a study by Sharma and Sehgal (2010), who found that infrastructure positively and significantly affects technical efficiency and output. Technical efficiency stands for the ability of economy (or organizations) to maximize output from a given set of inputs and this is the essence of spending efficiency.

Organizational slack, budgetary slack and discretionary slack were essential to the interpretation of the slack dynamics within public sector organizations as investigated by Busch (2002), who addresses the conceptual association among all three by defining organizational slack as extra resources within an organization, while budgetary slack as the intended overestimation of costs or underestimation of profits in a budget, and lastly the discretionary budget as the proportion of the budget that is almost unrestricted and can be freely deployed by managers. Overall, he suggests that while these three concepts are relevant to public organizations, they present exceptional challenges that require careful attention to effective assessment and management within such contexts since those concepts are much more complex due to the inherent nature of characteristics within the public sector management, such as the lack of profit goals, accountability to boards and stakeholders as if compared to the private sector organizations.

Furthermore, an important perspective is that spending efficiency in education that focuses on outcome-driven strategies and quality has considerable long-term benefits not just for individuals but also for governments. These include a competent workforce, greater economic productivity and lower costs on welfare and remedial services. Learning is an essential process that contributes to the success and development of individuals, organizations and even societies. Numerous investigated the relationship between learning and innumerable outcomes, including performance, innovation and organizational success, such as the work of Noe *et al.* (2014), who indicated that learning allows individuals and organizations to gain new knowledge and skills, which can increase productivity and efficiency in performing tasks. One study by Akhtar *et al.* (2011) found a significant and positive impact of learning on organizational performance in higher education institutes in Pakistan, as learning enhances innovative practices for individuals. A meta-analysis conducted by Tharenou *et al.* (2007) on 677 studies found that training appears to be more strongly related to organizational outcomes, including labor productivity/value added per employee, labor efficiency and productivity growth/gains. Hence, those outcomes represent the concept of spending efficiency.

Another critical factor that the literature implied about spending efficiency is employee empowerment. For instance, Ongori (2009) argued that employee empowerment increases organizational effectiveness through

Improvement in efficiency and cost reduction by employees, as investigated in the work of Suzik (1998). This is mainly because empowering employees leads to several benefits, including job involvement, job satisfaction, loyalty, better performance and faster execution of the work (Fulford and Enz, 1995). Reichheld (1996) supports this, claiming that enhancing employee loyalty decreases functioning costs. Abraiz *et al.* (2012) explained management methods of employees' empowerment that lead to several benefits, including high productivity and low costs. Also, a recent study found that empowerment is associated with strategies for reducing labor costs (Ivanova and von Scheve, 2020).

Additionally, research and development (R&D) have been the main stone for the change in public finance procedures in the last 3 decades including government spending as well as taxation (Afonso, 2004). As several studies supported this theory that efficient public spending implies a growth in human capital, which enhances the research, development and innovation activity (Afonso *et al.*, 2006; Zagler and Dürnecker, 2003). Thus, R&D are associated with government spending.

In this study, the researcher integrates the NIS perspective of institutional theory with the theory of resource slack to justify the argument that institutional pressure and resources are critical factors in determining spending efficiency and complement each other. This theory

integration adds value to exciting literature and represents one of the principal contributions of this study. The following section addresses the theoretical framework and the formation of hypotheses based on these two theories.

3. Theoretical framework and hypotheses development

3.1 The theory of resource slack

Several social science and managerial studies, such as the 1997 studies of Russo and Fouts, and Ullmann (1985) and those of Waddock and Graves (1997), as well as Cheng *et al.* (2016) and McGuire *et al.* (1988), have applied resource slack theory. In Waddock and Graves (1997) work, it was suggested that "If slack resources are available, then better social performance would result from the allocation of these resources into the social domains". Resource slack can be seen as an added source of funds, personnel, inventory, machinery and space that can be utilized for both monetary and nonmonetary voluntary or strategic objectives (Seifert *et al.*, 2004). Bourgeois (1981) explained resource slack as a "cushion of actual or potential resources which allows an organization to adapt successfully to internal pressures for adjustment or to external pressures for change in policy, as well as to initiate changes in strategy with respect to the external environment". Regarding spending efficiency, budgetary slack may be beneficial in solving efficiency problems (Yılmaz *et al.*, 2014). Hence, the theory of resource slack will be utilized to interpret some of the hypotheses presented in this study.

3.2 NIS perspective of institutional theory

Since the 1970s, the NIS perspective of institutional theory has been broadly seen as the main viewpoint in organizational research compared to other institutional perspectives (Scott, 2013). The perspective builds on three domains of isomorphism: coercive, mimetic and normative. Coercive isomorphism serves as regulatory and enforcing influences of specific institutions, which are considered critical in shaping the activities and structure of organizations (Chang, 2007). The mimetic nature of isomorphism creates a sense of doubt among leadership due to their lack of the necessary information to make an informed decision (DiMaggio and Powell, 1983). In such instances, the organization typically follows the approaches of other successful and comparable organizations to secure viability, achieve acceptance (Meyer and Rowan, 1977) and attain a market share (Chang, 2007).

The notion of normative isomorphism reflects the pressures generated by professionalism. There are two main aspects of professionalism highlighted by DiMaggio and Powell (1983): "One is the resting of formal education and of legitimation in a cognitive base produced by university specialists. The second is the growth and elaboration of professional networks that span organizations and across which new models diffuse rapidly". Formal education shapes the way individuals behave and manage various issues. In respect of spending efficiency and its direct relation to institutional isomorphism, Nukpezah and Abutabenjeh (2018) found that "institutional isomorphism drives cash management practices (e.i. Spending efficiency practices) in the countries by influencing how they follow state and agency mandates". In the following section, this study examines the hypotheses through the lens of the NIS perspective of institutional theory in conjunction with the resource slack theory.

3.3 Policies' strength and the efficiency of government spending

The first factor examined in this study is the influence of the policies' strength on spending efficiency. In the GCC, various policies have been implemented to promote spending efficiency, including governmental procurement policies, feasibility studies focused on spending efficiency, and local content policies to maximize spending efficiency outcomes.

Several references have discussed this policy update, Hasanov *et al.* (2022) and Brini and Jemmali (2016).

Coercive institutional isomorphism has been argued and proven to motivate the implementation of new and updated policies (Roszkowska-Menkes and Aluchna, 2017; Monios, 2017; Asiri *et al.*, 2020; Park, 2014). However, the critical question is how much coercive isomorphism would affect the implementation of spending efficiency. This study argues that the GCC's updated policies relating to spending efficiency would have a significant influence over their spending efficiency, as hypothesized below:

H1. There is a positive relationship between policies' strength and the extent of spending efficiency.

3.4 Private sector influence and the efficiency of government spending

The private sector in GCC countries depends heavily on governmental contracts (Hertog, 2013). This study argues that the lower quantity and quality of private companies and the less ethical environment among those companies would result in higher contract prices. This concept is aligned with the law of supply and demand; as the quantity and quality of private firms are more significant, the more alternatives the governments would have among companies, the lower contract prices would be, creating mimetic mechanisms among companies. The NIS perspective of institutional theory explains this behavior that mimetic mechanisms among organizations mean they will try to survive and gain legitimacy (Meyer and Rowan, 1977); and secondly, obtain a share of the market (Chang, 2007). Therefore, this study examines the following hypothesis:

H2. There is a positive relationship between the private sector and the extent of spending efficiency.

3.5 National infrastructure and the efficiency of government spending

Investment in infrastructure can also lead to cost savings for the government. For example, a study conducted by Kyriacou *et al.* (2019) found that Central European countries, New Zealand and Japan, are the most efficient when investing in transport infrastructure compared to the Eastern European countries, Russia, Turkey and Mexico, and this is because of the quality of governments in managing those projects. Also, as Erkan (2014) indicated, efficient logistics leads to efficient spending. Therefore, this study predicts that the quality of infrastructure along with value chain breadth as one variable named national infrastructure would positively influence the extent of spending efficiency. This prediction is aligned with the resource slack theory, as Seifert *et al.* (2004) mentioned, that resource slack can be seen as an added source of funds, personnel, inventory, machinery and space that can be utilized for monetary and nonmonetary voluntary or strategic objectives. Here, GCC investments in national infrastructure are considered a strategic goal. Consequently, this study examines the following hypothesis:

H3. There is a positive relationship between the national infrastructure and the extent of spending efficiency.

3.6 Learning and the efficiency of government spending

It has been indicated by the literature (Remund, 2010; Hung *et al.*, 2009; Masud *et al.*, 2004) that individuals with higher degrees and more skills have more tendency to manage resources as they acquire advanced financial knowledge efficiently. This idea is supported by the normative isomorphism behavior mentioned by the NIS perspective of the institutional

theory that learning pressure shapes how individuals behave and manage various issues (DiMaggio and Powell, 1983). Hence, this study investigates the following hypothesis:

H4. There is a positive relationship between learning and the extent of spending efficiency.

3.7 Workforce empowerment and the efficiency of government spending

Organizations are under immense pressure to increase performance and cut costs (Spreitzer and Doneson, 2005). Hence, empowerment is based on strategies for reducing labor costs (Ivanova and von Scheve, 2020). Employee empowerment has emerged as a popular strategy to enhance organizational performance since empowerment practices are often implemented to mitigate worker dissatisfaction and reduce the costs associated with turnover, absenteeism, sabotage and poor-quality work (Klein *et al.*, 2000). Empowering employees leads to several benefits, including job involvement, job satisfaction, loyalty, better performance and faster execution of the work (Fulford and Enz, 1995). Reichheld (1996) supports this, claiming that enhancing employee loyalty decreases functioning costs. This behavior of loyalty is caused mainly by the mimetic isomorphism pressure, where employees try to mimic the approaches of others in successful and comparable organizations to secure viability and achieve acceptance (Meyer and Rowan, 1977). Accordingly, this study examines the following hypothesis:

H5. There is a positive relationship between workforce empowerment and the extent of spending efficiency.

3.8 Research and development and the efficiency of government spending

The last factor examined in this study is the influence of R&D on the efficiency of national spending. Most countries in the gulf region have seen a significant increase in R&D within the governmental authorities responsible overspending efficiency since the past decade, with a particular focus on eliminating squandering and organize priorities and re-engineering governmental operations for purpose of minimizing spending and increasing efficiency without affecting the quality of the services and products outcomes (Asi *et al.*, 2019; Abdullah, 2014; Deloitte, 2013). This concept is aligned with the NIS perspective of institutional theory; in particular, under the notion of normative isomorphism where professionalism and science would shapes the way that individuals behave and manage various issues (DiMaggio and Powell, 1983). Therefore, the following hypothesis is tested to validate this argument.

H6. There is a positive relationship between R&D and the extent of spending efficiency.

In conclusion, this study has examined the influence of policies, private sector, infrastructure, learning, workforce empowerment and R&D on the extent of spending efficiency in the Gulf region countries.

Regarding the control variables, we tested four assumptions. First, we believe that the worse the gross domestic product (GDP), the more likely the government will focus on spending efficiency, and vice versa. Second, the more population the country has, the more the government will be enhancing its spending efficiency. Third, the highly leveraged governments are expected to work more on their spending. Fourth, the study should test the effect of profitability on the GCC countries since it also examines their debt, which has a two-way impact. Highly profitable governments can either ignore spending efficiency as a concept or they should invest in spending efficiency practices and initiatives since they have the resources (as indicated by the resource theory above). Table 1 presents the study variables and their measurements. The following section addresses the research method used in this study.

Symbol	Definition	Measurement
Dependent variable:		
SE_{it}	Spending efficiency	The GCI's indicator is labeled as "Efficiency of government spending"
Independent variables:		
PS_{it}	Policies' strength	It is composed of the following GCI's indicators: • Burden of government regulation • Efficiency of legal framework in settling disputes • Efficiency of legal framework in challenging regulations • Transparency of government policymaking
PR_{it}	Private sector influence	It is composed of the following GCI's indicators: • Ethical behavior of firms • Local supplier quantity • Local supplier quality
NI_{it}	National Infrastructure	It is composed of the following GCI's indicators: • Value chain breadth • Quality of overall infrastructure
HE_{it}	Higher education and training	It is composed of the following GCI's indicators: • Extent of staff training • Local availability of specialized training services • Quality of the education system
WE_{it}	Workforce empowerment	It is composed of the following GCI's indicators: • Brain-drain (Country capacity to attract and retain talent) • Country capacity to retain talent • Pay and productivity • Favoritism in decisions of government officials • Hiring and firing practices
RD_{it}	Research and development	It is composed of the following GCI's indicators: • Technological readiness • Capacity for innovation • University-industry collaboration in R&D • Gov't procurement of advanced technology products
Control variables:		
GDP_{it}	Gross domestic product (constant prices) – USD	• Source: International Monetary Fund, World Economic Outlook Database
POP_{it}	Population in Millions	• Source: International Monetary Fund, World Economic Outlook Database
TGD_{it}	Total Government Debt (Percent of GDP)	• Source: US Federal Reserve Economic Data
GGR_{it}	General government revenue (Percent of GDP)	• Source: International Monetary Fund, World Economic Outlook Database

Table 1. Symbols definitions

Source(s): The world economic forum (WEF) reports of the global competitiveness index (GCI) and the international monetary fund, world economic outlook database

4. Research methodology

4.1 Sample and data

In order to test the hypotheses addressed above, this study applies a quantitative approach that can analyze a set of panel data (time series) by applying multiple regression model using stata software. This study collected secondary data for all variables from the GCRs issued by the WEF for 10 years from 2009 until 2018 at 5 points of time since the data was published every 2 years. The WEF usually publishes the reports every 2 years, and the reports show

categories and indicators that are components of the global competitiveness index (GCI). This index observes 12 main pillars. The index results from a combined executive opinion survey based on 7 points Likert-scale, and publicly available statistical data. In accordance with the study importance, the sample of this study is limited to the GCC countries that are Saudi Arabia, United Arab Emirates, Oman, Kuwait, Qatar and Bahrain as the GCI presents data separately for each country which allows researchers to target specific countries in alliance with their research needs. Several studies used this GCI index as a data source, such as Alomari (2019), de Miranda *et al.* (2021), Pawitan *et al.* (2017).

4.2 Research model

This research applies a multiple regression model to analyze the panel data in order to test the hypotheses of this study:

$$SE_{it=}\ \beta 0 + \beta 1\, PS_{it} + \beta 2\, PR_{it} + \beta 3\, NI_{it} + \beta 4\, HE_{it} + \beta 5\, WE_{it} + \beta 6\, RD_{it} + \beta 7\, GDP_{it} + \beta 8\, POP_{it} + \beta 9\, TGD_{it} + \beta 10\, GGR_{it} + YearDummies + CountryDummies + \varepsilon_{it}$$

Table 1 below illustrated definitions of the symbols presented above:

Variable	Mean	Min	Max	SD	Skewness	Kurtosis
SE_{it}	4.94	2.80	6.20	0.98	−0.93	1.86
PS_{it}	4.53	3.38	5.60	0.60	−0.20	1.12
PR_{it}	4.98	4.17	5.57	0.45	−0.31	1.89
NI_{it}	4.77	3.70	5.75	0.60	−0.09	1.09
HE_{it}	4.43	3.47	5.60	0.65	0.28	1.88
WE_{it}	4.54	3.28	5.61	0.67	−0.19	1.14
RD_{it}	4.20	3.08	5.43	0.67	0.28	1.27
GDP_{it}	147.42	13.47	415.05	135.06	0.69	1.85
POP_{it}	8.31	1.11	32.75	10.31	1.37	1.63
TGD_{it}	24.84	2.13	62.09	18.16	0.52	1.19
GGR_{it}	39.06	17.56	71.24	14.05	0.83	1.09

Note(s): $N = 30$, and the analysis above is generated through the software StataMP 17

Table 2. Descriptive statistics

5. Results

5.1 Descriptive statistics

The following Table 2 provides descriptive statistics for the secondary data used in multiple regression analysis, such as the mean, minimum, maximum out of 7 points, standard deviation, Skewness and Kurtosis.

The descriptive analysis of the dependent variable SE_{it} indicates that the mean value was 4.94, with minimum and maximum values of 2.80 and 6.20, respectively. This suggests that most of the selected countries demonstrated above-average spending efficiency practices. At the same time, there is a country at least ranked very low on spending efficiency since the minimum value is the lowest compared to the rest of the tested variables. This result implies the seriousness and high implementation of spending efficiency practices by governmental bodies in most of the selected GCC countries, which the literature and reforms can validate as the GCC has been implementing visions (e.g. reforms) to aid their spending efficiency outcomes (2019). For example, Saudi Arabia secured financial savings of over 106 billion in four years in 2016–2019 (Alshammari, 2021). Four countries (Saudi Arabia, UAE, Qatar and

Oman) out of the Six GCC countries ranked within the top 10 worldwide in spending efficiency according to the GCR published by the WEF in 2018 (Schwab, 2018).

In terms of descriptive analysis of independent variables, PSit indicated almost average policies' strength, with the least country scoring at 3.38 and the highest at 5.60. However, a mean value of 4.53 represents above-average policies' strength. This means that solid policies are being adopted in the GCC countries. For PR_{it}, the mean value of private sector influence was the highest among other variables (4.98) with a minimum value of 4.17 and a maximum value of 5.75. It seems that private sectors are thriving in GCC countries in relation to ethical behavior of firms, local supplier quantity and quality. Then, the mean of NI_{it} is (4.77) and minimum is 3.70 indicates that national infrastructure for the majority of the GCC countries have above average infrastructure. This means that value chain breadth and quality of overall infrastructure is above average in the GCC countries. The HE_{it} illustrates a mean score of 4.43 with minimum and maximum values of 3.47 and 5.60 indicating overall good higher education and training environment in GCC countries. In particular, decent staff training, availability of specialized training services and good quality of the education system. Also, WE_{it} shows a mean value of 4.43 and minimum of 3.47 and maximum of 5.60 indicating overall positive workforce empowerment when it comes to country capacity to attract and retain talent, pay and productivity, favoritism in decisions of government officials, and hiring and firing practices. Also, RD_{it} ranked as the lowest mean score (4.20) across other variables although it is still above average; thus, this means that GCC countries consider R&D the least in comparison with other factors tested in this study although it is not being neglected.

Regarding the descriptive analysis of control variables (Table 2), there is a fluctuation among the GCC countries in-terms of GDP_{it} as one famous economic indicator as the min and max values are 13.47 and 415.05, respectively with a mean score of 147.42. The POP_{it} also varies between the GCC countries, ranging from min 1.11 up to 32.75 and a mean of 8.31 million people. In agreement to the rest of the control variables, also TGD_{it} and GGR_{it} indicated a clear variation over the GCC countries, so this study had to include the country's effect in the model during the regression analysis. Regarding Skewness and Kurtosis, all variables are within the cut-off values of ±2 acceptable data distribution. Several statical references recommend these cut-off values (Trochim and Donnelly, 2006; Field, 2000; Gravetter *et al.*, 2021).

The correlation analysis in Table 3 shows the direction of the association among two variables, which can either be positive or negative, while the strength of a negative and positive correlation is significant at −1 and 1, respectively; both directions can be theoretically justified by the literature (Pallant, 2016).

Variable	SE_{it}	PS_{it}	PR_{it}	NI_{it}	HE_{it}	WE_{it}	RD_{it}	GDP_{it}	POP_{it}	TGD_{it}	GGR_{it}
SE_{it}	1.00										
PS_{it}	0.85	1.00									
PR_{it}	0.70	0.80	1.00								
NI_{it}	0.71	0.75	0.74	1.00							
HE_{it}	0.73	0.91	0.82	0.80	1.00						
WE_{it}	0.82	0.92	0.91	0.77	0.93	1.00					
RD_{it}	0.75	0.81	0.73	0.82	0.88	0.84	1.00				
GDP_{it}	0.32	0.16	0.50	0.48	0.27	0.40	0.40	1.00			
POP_{it}	0.12	−0.10	0.18	0.20	−0.04	0.09	0.13	0.84	1.00		
TGD_{it}	0.25	0.39	−0.05	0.14	0.45	0.25	0.38	−0.43	−0.48	1.00	
GGR_{it}	−0.53	−0.47	−0.20	−0.44	−0.47	−0.42	−0.44	−0.14	−0.12	−0.58	1.00

Table 3.
Correlation matrix

Note(s): The analysis above is generated through the software StataMP 17

Also, Hair *et al.* (2013) explained that the ideal situation would be to have a high correlation between independent and dependent variables while having less correlation between the independent variables themselves. Then, they set the presence of a high correlation at 0.90. However, they mentioned that sometimes high correlation is unavoidable in certain situations, such as 'using dummy variables to represent nonmetric variables or polynomial terms for nonlinear effects (p. 196)'. The data used in this study is secondary data collected from the GCI issued by WEF based on 7 Likert scale survey, and this led to a high correlation (<0.90) in a few of the variables. However, the survey questions are very different in meaning, which indicates that such a high correlation does not represent a problem for the validity of the regression.

5.2 Regression results and discussion

Table 4 below presents the outcomes of the multiple regression model introduced in this study. The result shows policies' strength significant with a *p*-value of 0.033 and positive, which confirms the hypothesis that policies' strength positively influences the extent of spending efficiency implementation in the GCC countries, which is validated by descriptive analysis that

Symbol	Definition	Coef.		*t*- statistic	*p*> *t*
Cons	Model Constant	*β0*	0.344	0.08	0.938
PS_{it}	Policies strength	*B1*	1.546	2.48	0.033**
PR_{it}	Private sector influence	*B2*	−1.120	−1.34	0.211
NI_{it}	National Infrastructure	*B3*	−1.240	−2.77	0.020**
HE_{it}	Higher education and training	*B4*	0.684	1.32	0.217
WE_{it}	Workforce empowerment	*B5*	−1.378	−2.22	0.050**
RD_{it}	Research and development	*B6*	0.103	0.28	0.783
GDP_{it}	Gross domestic product	*B7*	−0.038	−3.78	0.004*
POP_{it}	Population	*B8*	0.779	3.08	0.012*
TGD_{it}	Total government debt as a percentage of GDP	*B9*	−0.012	−0.83	0.425
GGR_{it}	General government revenue is a percentage of GDP	*B10*	0.081	2.40	0.037**
Year with reference to 2010:					
2012			−0.082	−0.36	0.723
2014			−0.477	−1.82	0.099
2016			0.109	0.19	0.853
2018			−0.461	−0.69	0.507
Country with reference to Saudi Arabia:					
UAE			15.873	3.05	0.012
Oman			7.649	2.04	0.068
Qatar			12.779	2.53	0.030
Kuwait			3.967	1.17	0.268
Bahrain			9.617	2.09	0.063
Additional statistics:					
$N = 30$		*F*-value = 46.08		Prob > *F* = 0.0000	Overall *R*-sq = 0.97

Note(s): *Significant at 1%, **Significant at 5%. The dependent variable is spending efficiency. Robustness checks were conducted by including additional control variables, and the results were virtually unaltered. The analysis above is generated through the software StataMP 17

Table 4. The regression analysis results

indicated a higher mean value (4.94 out of 7 points) for policies' strength. The result is consistent with the results of Rayp and Van De Sijpe (2007), who indicated that good governance suggests political stability, which ultimately leads to higher efficiency of government policies in 52 developing countries. Also, it confirms the study of Wardhani *et al.* (2017), who illustrated good public governance increased the efficiency of government spending of Indonesia. Further, the national infrastructure was found to be significant with a *p*-value of 0.02; however, the direction was negative indicating the opposite of what the hypothesis suggested, so it seems that the better infrastructure, the less need to spending efficiency practices. The justification is that GCC countries with well-established infrastructure are less concerned about enhancing the extent of spending efficiency practices on the account of their infrastructure. There are several studies supporting the idea that more spending will improve many aspects of public infrastructure, which in turn will enhance economic development, such as the work of Palei (2015), Babatunde (2018), and Chindengwike (2022).

The last significant independent factor is workforce empowerment, with a *p*-value of 0.05 and a negative direction, unlike what was perceived by the hypothesis. Although this relationship has yet to be investigated at the country level, it is consistent with studies showing that workforce empowerment requires more costs and spending at the organisation's level (Kazlauskaite *et al.*, 2011; Ongori, 2009). Nonetheless, this implies weak adoption of spending efficiency related governance, risk and compliance (GRC) concept when it comes to governmental employees to direct them towards the implementation of spending efficiency practices as the influence of GRC on efficiency and effectiveness and cost reduction has been addressed in the literature (Frigo and Anderson, 2009; Racz *et al.*, 2010; Ele and Oko, 2016).

In terms of control variables (Table 4), GDP was found to be natively influencing the extent of spending efficiency implementation with a *p*-value of 0.004, and this study suggests that the better the GDP as a proxy for the national economic outlook, the less countries would apply spending efficiency practices. This result confirms the results of Afonso *et al.* (2021), who found that GDP in tax revenues decreases government spending efficiency. It is also supported by a study conducted by Al-Samarrai *et al.* (2019), which states that economic growth in terms of GDP "has been the main driver of increases in public education spending". The population was found to have a positive influence on the extent of spending efficiency implementation in the GCC countries, with p-vales 0.012, which was expected that the higher the population, the more government needs work on their spending efficiency parties due to the costly government running costs, especially that in GCC countries governments have not converted most of the public services into full private firms and still depends heavy on governmental budgets. The results are consistent with the work of Almalki and Simsim (2020) and of Afonso *et al.* (2022). The last control variable was general government revenue as a percent of GDP, which also was found to have a positive impact (*p*-value of 0.037) on the extent of spending efficiency and this was expected due to the adoption of value-added tax (VAT) in most of the GCC countries in conjunction with the actual implementation of spending efficiency practices in order to survive hard economic times caused by the sharp decline in oil prices during the years of 2015–2017 in GCC countries; hence, this is considered to be a unique situation that investigated by previous spending efficiency related studies.

6. Conclusion and future perspective

This paper studies the contextual factors affecting the efficiency of governmental spending in GCC countries through the lens of NIS perspective of institutional theory and the resource slack theory. The study applies a quantitative approach to analyze a set of panel data using a multiple regression model based on the WEF reports of GCI for 10 years from 2009 until 2018 at 5 points of time since the data was published every 2 years. Therefore, it is important to mention that GCI disclosure assessment criteria changed in 2019, limiting this study's data

collection until 2018. The results fail to detect any evidence of the effect of private sector influence, higher education and training and R&D on the extent of spending efficiency practices. Nonetheless, the results show evidence that policies' strength had a positive influence on the extent of spending efficiency practices, while national infrastructure and workforce empowerment had a negative influence. The results suggest that it is important to focus on strengthening policies, which represent coercive isomorphism power in influencing the extent of spending efficiency practices in the GCC countries. The results also suggest enhancing national infrastructure would require more financial slack and ease up spending efficiency practices to establish a country's infrastructure well. This can be seen in mega projects, especially in GCC countries, such as the new Neom city in Saudi Arabia, Masdar city in UAE, stadiums and hotels built in Qatar for the FIFA (Fédération Internationale de Football Association) World Cup 2022 and Sabah Al Ahmad Sea city in Kuwait. These projects require tremendous financial resources along with other human and technological resources; therefore, applying spending efficiency in such very complex, strategic and sustainable projects can be unrealistic. Also, the study shows that workforce empowerment results in less spending efficiency practices, which can be due to the costs associated with empowerment (i.g. Salaries, benefits . . . etc); nevertheless, such costs at the country level in comparison to the organizational level would not be that expensive to lead to a significant result. The more realistic justification is that, the more empowered the workforce, the more knowledge and capabilities they have since they have acquired more education and training, which will give them the knowledge to surpass the policies and laws associated with spending efficiency to deliver other organizational and personal goals including, higher salaries, benefits, luxurious utilities and services which in their end may believe their behavior reflects more outcomes than those result from standards set by spending efficiency authorities.

This study provides the following recommendations for policymakers: The GCC government should direct government training bodies and universities (in business majors) to include mandatory spending efficiency subjects to enhance current knowledge. Also, the governmental-related bodies of spending efficiency should make agreements with universities and research centers to improve the diverse R&D aspects of government spending efficiency. Another important recommendation is to enforce the adoption of the GRC concept regarding spending efficiency practices for governmental employees to guide them towards implementing spending efficiency practices.

Lastly, it is essential to note that this study is limited in terms of data since the WEF's reports of GCI were published every two years during the 10 years from 2009 until 2018 at 5 points of time with the same format, and then publication was stopped in 2020 due Covid-19. Alternatively, they issued special issues relating to economic recovery post-COVID-19 Covid-19, and no other issue has been published since then. Therefore, future studies should look for alternative data sources in order to expand this research to include the last five years. In addition, future studies should investigate the organizational setting that affects employees' behavior in public towards spending efficiency practices. Also, it is interesting to examine the influence of the GRC concept on governmental spending efficiency practices.

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