Dilemma of institutional performance assessment in governmental sector
A proposed KPIs model

Mohamed Awad El Araby and Noor el Dien Salem Ayaad

*Department of Public Administration, Faculty of Economics and Political Science,
Cairo University, Giza, Egypt*

Abstract

Purpose – The main target of the study represented in developing a proposed Quantitative Model for the purpose of measuring the administrative performance of public governmental organizations, taking into account the validity of the model for many different contexts in practice through governmental sector.

Design/methodology/approach – Depending on statistical approach, both authors tried to handle this issue through assessing institutional performance in the state owned units on many levels starting from individual level (HR and leaders), sub-units, organization level, then deriving an aggregated formula for assessing general institutional performance of the whole public body in one state, depending on reviewing some of concerned literatures.

Findings – The authors could already formulate some proposed criteria for assessing and measuring institutional performance on three different levels.

Originality/value – Although the topic is considered one of the most complicated areas of institutional reform trends, the idea remains very vital as a step forward to improving public policy implementation in the governmental sector, besides that it is correlated to institutional capacity building process in practice.

Keywords Performance assessment, Key performance indicators (KPIs), Institutional performance

Paper type Research paper

Introduction

Generally speaking, the issue of measuring institutional performance in the governmental sector is a vital field of research, and it is considered to be one of the most difficult areas of studies in the field of administrative reform because of diversity of policies and programs of one government from one period to another, from a sector to other one, taking into consideration the factor of privacy among different and separated performances of each government model on the international level that is why it is too difficult to agree on one pattern or template for assessing institutional performance that could be valid for all types of governments and Bureaucracy.

Despite these difficulties associated with the process of measuring public performance, we cannot stop dealing with dilemma of performance assessment issue as it is very vital

aspect in the governmental practices as a base of judging efficiencies of the process of executing public policy in one state, thus we may be in a serious need for developing some models to assess our governmental public bodies regularly, so it is a hard task for sure, but it is not impossible in the same time.

Based on the above, the study is going to present some of relevant literatures on the topic of institutional performance assessment on many levels, for the purpose of developing a proposed model for measuring administrative performance, applying on governmental sector organizations, taking into consideration the dimension of expressing the proposed model quantitatively, through statistical and mathematical formulas.

The main question of the study represents in how to formulate some quantitative model for assessing Institutional performance of public governmental organizations using a number of developed key performance indicators (KPIs), including three different proposed levels of institutional performance (individual + sub units + organization in total).

Based on the previous context, the study acquires it is importance as:

- This study is considered to be a continuation of many research studies in the same way of developing practical formulas for measuring public performance.
- Authors are seeking to benefit from quantitative tools to serve the administrative studies related to measuring the institutional performance in the public sector.
- The idea of research is vital as it baves the way for assessing institutional performance in one step and then assessing executing public policy in the following step in future studies in the same line.

The study also is seeking some rational answers for some questions as follows:

Q1. What is the logic laying behind the process of assessing institutional performance in the public sector organizations?

Q2. How difficult is the process of assessing Public Institutional Performance?

Q3. What are sub-components of institutional performance?

Q4. How could literature deal with KPIs for assessing performance?

Literature review and theoretical framework

Authors could revise a number of studies and research studies in relation to designing indicators of measuring institutional performance; they can be categorized as follows:

(1) Studies in relation to the process of performance management context.

(2) Studies in concern with developing KPIs models on micro level performance (individual level).

(3) Studies in concern with developing KPIs models on macro level performance (organization level).

(1) Studies in relation to process of performance management context:

- Study of Stenberg *et al.* (1982), titled: "From MBO to MBR.": The study drafted some comprehensive mechanism on the performance management process based on main five elements starting with performance planning on the whole organizational level through setting priorities, targets and outputs, the second component is on performance monitoring through tracing processes, making adjustments and receiving feedback, third is performance appraisal through detecting gaps in

between what is planned and real achievements, fourth is performance reinforcement through determining and applying incentives, fifth is on future performance developments.

- Study of Poister and Streib (1999), titled: "Strategic Management in the Public Sector: Concepts, Models, and Processes.": The study proposed some approach of managing performance through the perspective of strategic management, thus we have four main aspects for the whole mechanism starting with strategic planning, setting a result oriented budgeting system, performance measurement and strategic measurement, and according to the model, those four elements are supposed to work in a circle mechanism and governed by values, vision and organizational mission, and monitored by internal and external actors.

- Study of Melkers (2006), titled: "On the Road to Improved Performance: Changing Organizational Communication through Performance Management.": The study approached the process of managing institutional performance through the perspective of (efficiency and effectiveness model) that it made a kind of direct relationship in between efficiency and inputs, process of managerial activities in one organization from a side, and another correlation in between effectiveness and organizational outputs, societal effects from the other side in one model.

- Study of Boyle (2006), titled: "Measuring Public sector productivity: lessons from international Experience: The study handled the concept of public sector performance in public sector from the perspective of productivity, measuring productivity and the difficulties, performance environment, then presented some of the practical model concerning measuring public sector productivity, which is retrieved from some international experiences such as Denmark, Ireland, Finland and so on.

- Study of Anastassiou and Doumpos (2000), titled: "Multicriteria Evaluation of performance of Public Enterprises: The case of Greece": The study handled the concept of evaluating performance of public sector applying on public enterprises (40 cases of public companies sample) located in Greece, then author proposed a multicriteria decision aid methodology to evaluate the financial performance of the public enterprises under study.

- Study of Puhakka (2018), titled: "Performance Management in a Public Sector Organization: Creating KPIs for a PSC Web Portal": The basic assumption of study based on the development of a business-wide organizational performance management model depending on setting a precise identification of overall organizational objectives and resulting sub-goals, developing practical mechanism and creating practical indicators for measuring performance, analyzing results of indicators, and then evaluating overall performance beside setting a number of corrective actions to overcome weaknesses points shown after completion of measurement and evaluation processes of public bodies.

- Study of Leoveanu (2016), titled: "PERFORMANCE EVALUATION SYSTEMS IN THE PUBLIC SECTOR": study is based on developing a comprehensive model for analyzing institutional performance depending on leadership factor and its role in enhancing values of administrative innovation and its impact on the overall performance of an organization on many levels, performance outcomes on the level of citizens receiving services and on the level of community responsibility of public organizations.

(2) Studies in concern with developing KPIs models on micro level performance (individual level):

- Criteria for the efficiencies of the executive administrative leaderships formulated by the office of personnel management (OPM) – USA, at the level of performance of the federal executive leaderships as follows (Bolden *et al.*, 2003):

US model of standards for competencies of senior federal executive leaders

Major indicators	Change leadership and management	Human resources management skills as an organizational capital	Results-based management	Operational skills	Building alliances and communication skills
Sub-indicators	Continuous organizational learning Innovation and creativity Flexibility Motivation Strategic thinking Ability to formulate a vision for the future	Management of organizational conflicts Management of diversity and diversity Honesty and integrity Building teams	Accountability Customer service Resolution Entrepreneurship skills Problem solving skills Technical skills	Financial management skills Personnel management skills Effective management of information technology (IT)	Negotiation skill Human skills Verbal communication skill and speaking Writing, communication skills Political bargaining Internal partnerships

Source: Senior Executive Service OPM-USA (2019)

- Some models of the evaluation of the efficiency of senior administrative leaders in the context of the British public work environment (British models): The study of Bolden, R., Gosling, J., Marturano, A. and Dennison, P., compiled different sets of standards for the competencies of senior executive leaders in British Governmental sector according to Recommendations of Civil Service Corporate Management, Cabinet UK as follows (www.cabinet-office.gov.uk/civilservice/scs/competences. htm):

UK leadership effective performance standards in governmental sector

EO for local government – compendium of competencies (www.lg-employers.gov.uk/skills/leadershipcomp) Ability of change Institution oriented performance Customer oriented management	*Senior Civil Service Competency Framework (SCS)* – (Civil Service Corporate Management, Cabinet UK) (www.cabinet-office.gov.uk/civilservice/scs/ competences.htm)

D ecision-making capacities	Setting goals
Social justice	Strategic thinking
Teamwork building	Motivating HR
	Continuous learning and development
	Service delivery oriented performance

National College for School Leadership – Hay McBer
Model www.ncsl.org.uk/index.cfm?pageID=
haycompletechar

Northern Ireland Senior Civil Service Core Criteria

Analytical thinking capacity	Leadership skills
Organizational trust	Strategic thinking
Improving services	Result oriented performance
Accountability	Good external partnerships
Positive human interactions	HR capacity building
Strategic thinking	Effective communication skills
Teamwork value	Resources creative managing
Initiation soul	
Transform leadership value	

Ministry of Defense
MoD Senior Civil Service Competency Framework
www.army.mod.uk/linked_files/ag/servingsoldier/
career/usefulinfo/files/pdf/OJAR%20Intro%20Booklet.
pdf

Scottish Executive Framework

Collective work	Achievement
Self-effectiveness	Output performance focus
Result oriented performance	Good communication
	Team and collective work capacity
	Effective HR management

- SIGMA Radius Leadership Effectiveness (2017) model: This model sets out an integrated framework for standards of individual performance competencies and skills by reference to five main categories divided into a number of sub-indicators as follows:

SIGMA Radius Leadership Effectiveness (2017) model

Indictors		Relative weights of each indicator
A) Cognitive managerial skills		
1	IQ level	6
2	Ability of setting priorities	5.9
3	Creativity	5.8
4	Decisiveness	5.8
5	Analytical capacities	5.5
6	Technique skills	5.5
7	Accuracy	5.5
8	Objectivity	5.3
9	Taking risks	4.6
B) Interpersonal managerial skills		
10	Managing organizational conflicts and disputes	6.4
11	Sensitivity	6

(*continued*)

SIGMA Radius Leadership Effectiveness (2017) model	
Indictors	Relative weights of each indicator
12 Forming right impression	5.9
13 Negotiation	5.9
14 Social intelligence	5.9
15 Convincing people	5.8
16 Good command of presenting ideas	5.6
17 Motivating performance	5.6
18 Good communication	5.5
19 Setting and fixing personal issues	5.5
20 Mind openness	5.5
21 Customer oriented attitude	5.3
C) Personal managerial qualities	
22 Honesty	6.4
23 Listening to others	6
24 Emotional control	5.8
25 Values diversity	5.5
26 Self-respect	5.4
27 Desire of continues learning	5.3
28 Flexibility	5.3
29 Discipline	5.3
30 Dependence level	5.1
31 Amputation	5
32 Independency	4.8
33 Achievement oriented	4.5
D) Teamwork, supervision, planning and productivity	
34 Seeking specialty	6.1
35 organizing	5.9
36 Separation in between career and personal life	5.8
37 Continuous developing of others skills	5.5
38 Motivating employees	5.5
39 Organizational effective representation	5.5
40 Inspiring teams	5.4
41 Team work oriented	5.4
42 Setting clear vision	5.4
43 Productivity	5.3
44 Good monitoring and control commands	5.1
45 Ability of directing	5.1
46 Good distribution of work responsibilities	5
47 Delegation level of powers	5
48 Short-range and tactical planning skills	5
49 Strategic planning skills	5
50 Inspiring power and being good example for others	4.9
E) Overall leadership effectiveness	
51 Overall assessment of leadership performance	5.3

- Campbell leadership index (CLI) performance model.

(3) Studies in concern with developing KPIs models on macro level performance (organization level):

Organizational flexibility	Internal trust levels	Positive social interactions	*CLI* Energetic vital performance	Leadership standards	Major indicators
Static tendency Ability to adapt to changes	Credibility Organizing Productivity Rationalizing resources	Human tendency Empowering Friendship	None	Amputation Courage Dynamic Adventure tendency Experience Originality and creativity Convincing	Preferable supplementary indicators

- International civil service effectiveness (InCiSE) index, developed by Blavatnik School of Government in cooperation with the Institute for Government – Oxford University, UK, 2017: According to index results, the Canadian administrative body achieved the highest performance of the government in 2017 as the best administrative body in the world, the parameter adopted creation of indicators for measuring and assessing institutional performance according to the following criteria:

Major indicators	Weight	Sub-indicators
Attributes	1/3 (30%)	Integrity, openness, capabilities, inclusiveness, staff engagement and innovation
Core functions	2/3 (70%)	*Central executive functions* (Policymaking, fiscal and financial, regulation and risk/crisis management) *Mission support functions* (Procurement, HR, IT and finance) *Direct service delivery functions* (Tax administration, social security administration and digital services)

Source: International Civil Service Effectiveness (InCiSE) Index (2017)

The top 10 government agencies in the world according to results of 2017 were as follows:

1. Canada, 2. New Zealand, 3. Australia, 4. UK, 5. Finland, 6. Sweden, 7. Estonia, 8. Norway, 9. South Korea and 10. The USA.

- Dönmez and Toker (2017) model.

- Study of Mihaiu *et al.* (2010), titled "Efficiency, Effectiveness and Performance of the Public Sector": This parameter has a special non-traditional nature as it is based on a combination of indicators measuring both the administrative and economic aspects of the governmental sector as follows:

- Study of Kolkma *et al.* (2016), titled: "Guidelines for the Evaluation of Public Sector Operations": The study developed a four-level model for assessing and measuring institutional performance, with equal weights for each main indicator and a number of sub-indicators that represent each of main indicators, as follows:

Model standards	Relative weight for each indicator
Intrinsic satisfaction	3.78
Extrinsic satisfaction	3.31
General satisfaction	3.74
Affective organizational commitment	3.69
Relatedness	3.89
Competence	4.30
Autonomy	3.44
Extra effort	2.25
Effectiveness	2.72

Public sector performance indicator	
Opportunity indicators	*Standard Musgravian indicators*
Administrative (Corruption, red tape, quality of the judiciary, shadow economy)	Distribution (Income share of 40% poorest households)
Education (Secondary school enrolment and education achievement)	Stability (Stability of GDP growth (co-eff of variation, inflation rate 10 years average)
Health (Infant mortality and life expectancy)	Economic performance (GDP per capita (PPP), GDP growth 10 years average, unemployment 10 years average)
Public infrastructure (quality communication and transport infrastructure)	

Source: Afonso *et al.* (2003), in Mihaiu *et al.* (2010, p. 139)

Categories	Weight (%)
Relevance	25
Effectiveness	25
Efficiency	25
Sustainability	25
Overall assessment (weighted average of above indicators)	Highly successful: When Overall weighted average is greater than or equal to 2.50
	Successful: When Overall weighted average is greater than or equal to 1.75 and less than 2.50
	Less than successful: Overall weighted average is greater than or equal to 0.75 and less than 1.75
	Unsuccessful: When Overall weighted average is less than 0.75

Source: Kolkma *et al.* (2016)

- KPIs Models inspires from business environment applying on overall institutional performances of enormous corporations (oil, telecommunications, electric industries, postal services, transportations, etc (Bolden *et al.*, 2003, pp. 18-20).

Some of performance competencies from western business environment	
Philips Competencies http://ad.chinahr.com/jobads/philips/leadership.asp Results oriented managerial system Market focus Commitment Developing HR capacities High Achievement level	*AstraZeneca Capabilities* (www.astrazeneca.co.uk/careers/developingyourself/leadership.asp) Setting an effective strategy Organizational commitment Service delivery Effective partnerships Developing people
Vodafone Global Competencies (www.glp.vodafone.com/global.htm) Sharing values Strategic vision Setting high organizational capacities Maximizing profitability	*Federal Express Qualities* (www.geocities.com/gvwrite/9faces.htm) (FED EX) Internal charismatic leadership models Caring about others Mental motivation rates Courage Independency Flexibility Respecting others Honesty
Shell framework Sharing a clear strategic vision for future Customer oriented performance Maximizing opportunities Professionalism Self-effectiveness Courage Motivation, training and development Respecting diversities Results oriented performance	

General comment on the literature. From the above presentation of literature, authors detected many differences among researcher's efforts in their ways of measuring institutional performance. Some of these efforts focused on the overall institutional performance, while others focused on individual performance including detecting relative weights for each category of skill packages, which, in turn, helped authors to develop their proposed model by combining macro and micro performance levels, with expressing quantitatively the aspects of the proposed model on different levels.

Based on the previous literature review, the authors established their proposed model depending on analyzing some theoretical facts as follows:

(1) *Defining the logic behind process of measuring, assessing administrative performance in the governmental sector.*

The administrative body of one state is considered to be the first – but not the only executive area in charge of preparing developmental strategies, policies, plans and programs through its formations and bodies including ministries and local agencies, thus it was necessary to focus on developing a series of performance measurement packages to judge quality, discipline and accuracy of public body units performances with an objective, scientific and accurate mechanisms, away from personal or political estimates, so that it is an elaborated vital issue axed on how to accurate performance,

how to assess the planned and implemented developmental goals and strategies in the light of compliance, quality standards of performed public services provided to citizens, combining exerted institutional efforts with practical indicators that accurately reflect what is planned and achieved on reality, and how citizens are satisfied with their governmentally provided services.

(2) Assessing institutional performance in the public sector: is it an easy or impossible process:

Although this process is too vital, setting public performance indicators is not an easy process for many reasons:

- Continuing adjustments and changes of development plans from one period to another affect some directions of governmental behavior and performances in many sectors.

- Changes of government's structures and leaders from case to other, especially in areas that lack to political and economic stability, thus it is so hard to process to unify only one model for performance assessment even in case of one state's public body.

- The multiplicity nature of public sectors and government services provided to citizens and different forms, different times, places of services delivery and government agencies based on their procedures and routines.

- The processes reconstruction and adjustments of some organizational structures in some administrative systems affect standards of performance and lack the creation of KPIs models stability in one sector.

- The absence of precise descriptions of functions, tasks of the internal administrative units structures in government bodies, especially in some developing models.

- The wide variety of names, forms, working systems, legislative frameworks and organizational structures of one government units, which make it too difficult to agree on one unified form of measurement and evaluation of institutional performance in one area, as shown in the following Figure 1:

- The nature of many public services provided to citizens themselves makes it difficult for specialists to detect unified concrete criteria for measuring, because they are invisible or have intangible moral value, as in sectors of media, security, culture, religion, welfare, justice, public works, etc.

- The nature of governmental services in the core does not seek profitability as in private sector products, services, thus measuring performance could be easier in private than public sector service according to profitability standards.

For the previously shown justifications, the issue of building a unified pattern of indicators for measuring public performance has many practical, technical and scientific difficulties, which open the way for continuous research and exploration regarding this problem, it is not so easy to create practical indicators for measuring and evaluating institutional performance in the public sector that could be valid or applicable in all times and places, However, it is not impossible in the same time, so that it is a hard equation.

(3) The administrative institutional performance in the governmental sector in it is the final image is a sum of other sub-components:

Institutional performance in the governmental sector is considered to be one of the most complicated concepts in practice through daily transactions in official constituencies, it is some unique mix of individual efforts, subunits activities, and overall organizational
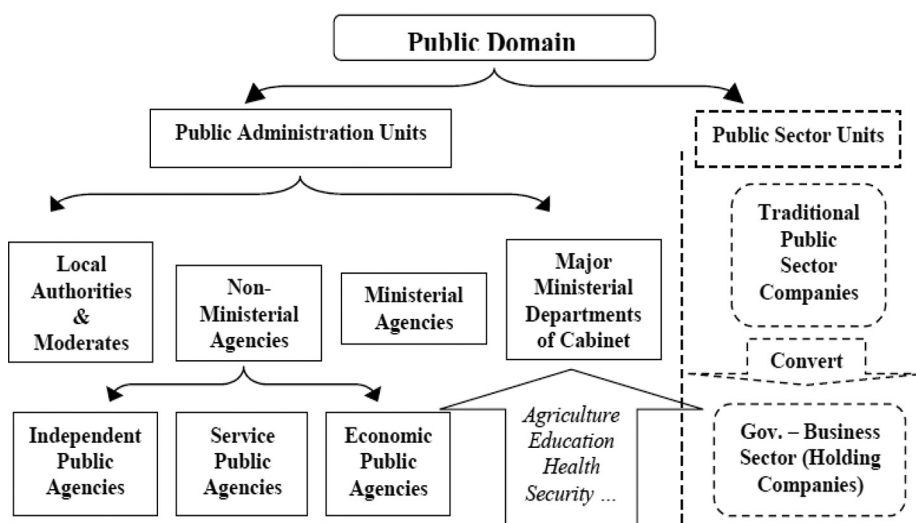
Source: Designed by Authors

Figure 1.
Components of public
administration
bodies' performances

behavior dealing with citizens, thus institutional performance is not expressed only by individuals (HR elements), but it includes:

Individuals performance {Micro level} + Sub units performance {minor goals/Meso level} + Organization performance {Sectoral goals/Macro level} thus, the concept of institutional performance is a mixture of 3 different dimensions (Figure 2).

(4) Determinants of Institutional performance:

Institutional performance is generally governed by a long series of organizational determinants affecting efficiency, directions and rates of institutional performance at all levels, either negatively or positively, in light of the following factors and variables (Figure 3).
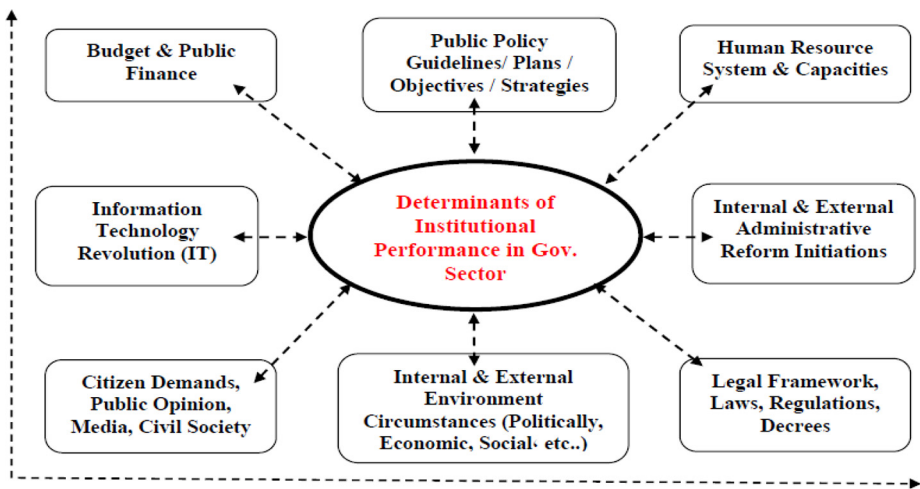
Institutional performance is sometimes influenced by civil service systems and the methods of selection of human resources working in the public sector. It is also influenced
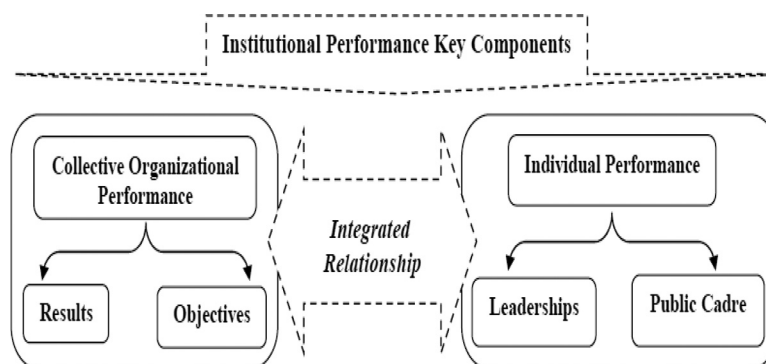
Source: Authors

Figure 2.
Institutional
performance
dimensionsSource:
Authors

Figure 3.
Institutional
performance
determinants

Source: Authors

by axes of state's policies, plans and programs, laws and legislation, economic conditions, needs and demands of citizens, IT, administrative development and reform plans, factors of political, economic, social stability, and other determinants, thus institutional performance is a multi-dimension concept in practice.

(5) *Overlapping institutional performance dynamics (total state's bureaucracy performance): performance circle flow.*

This can be illustrated in details through the following model, (El Araby *et al.*, 2019) (Figure 4):

From the above it is clear that institutional performance as an aggregated form of many levels is an overlapping concept in practice, it has many intensive dimensions and variables, thus there are many difficulties in measuring institutional performance, as it is associated with state's plans, budgets, needs of citizens, implemented programs by state's bureaucracy, there are many correlations in between performance and quality of services, public policies, programs, public satisfaction, all of these dimensions could be covered in more additional studies in the same line, with the help of quantitative methods, using different types of KPIs.

Methodology

Approach

The study is based largely on the superiority of mathematical statistical approach for the purpose of quantitative expression of measuring and evaluating institutional performance through developing a number of equations and mathematical formulas using averages and weighted averages for creating a formula to quantify measuring the institutional performance of public sector organizations.

Data collection tools and sources

The study adopts secondary data collection tools through the examination of a number of literatures, and research studies to identify the most important indicators used in measuring
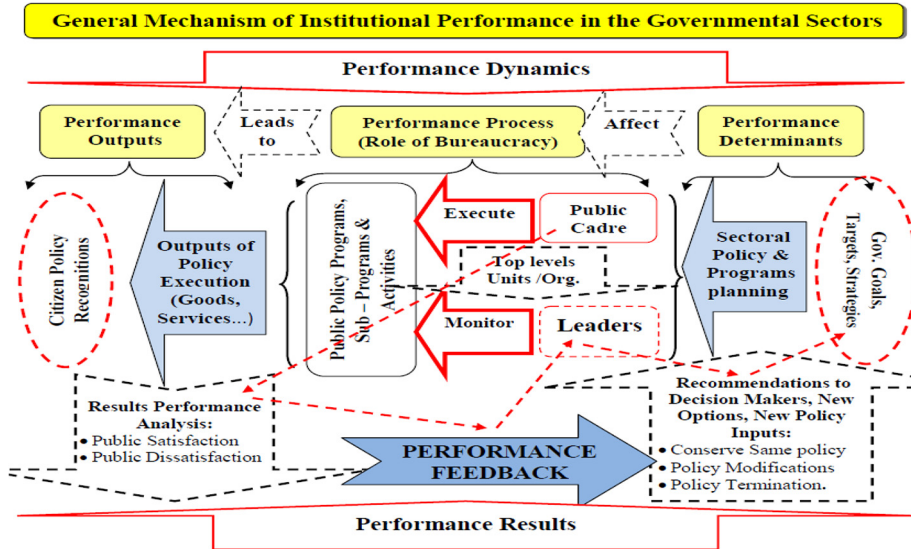
Figure 4.
Institutional
performance
dynamics

Source: El Araby *et al.* (2019)

and evaluating institutional performance on micro individual level of human resources and macro level of administrative bodies that can be benefitted from the context of modern international experiences.

Study procedures
The authors could develop their proposed model for the purpose of assessing governmental organizational performance on many levels (institutional performance on individual level + institutional performance on Sub-unit level + institutional performance on organizational level), and for achieving such objective, they followed some systematic procedures:

- Reviewing some of concerned literatures in the field of assessing institutional performance as shown in first axis of study.
- Liquefying some of selected criteria of KPIs from literatures.
- Detecting dimensions of institutional performance on three different levels as mentioned.
- Based on the self-judge of authors, they nominated three different types of KPIs matching with each level.
- Setting up a number of relative weights of each sub-indicators using statistical mean values for each as shown in the tables below.
- Representing different KPIs mean values in mathematical formulas quantitatively.
- Deducting some aggregated mathematical formula that represents whole total performance on state level.

Study results

The authors followed some systematic mechanism for developing their model starting from previously illustrated facts, and by reviewing some of concerned literatures in the same line of the topic; authors could detect their proposed KPIs model categories as follows:

- Indicators for measuring institutional performance at the individual level (general cadre – non-leadership positions).
- Indicators for measuring institutional performance at the individual level (leadership positions).
- Indicators for measuring the performance of a minor sub-organizational unit (sector/central administration/public administration/sub-division) within a ministry, body, agency or service department.
- Indicators for measuring the performance of a public organization (ministry level/public authority/agency/public institution/service directorate).
- Setting and deriving a proposed formula for measuring the performance of the public sector as an aggregated whole body of state's apparatus.

The following Figure 5 shows the general features of the proposed model:

In the following part, the authors present their proposed model in more details through the following criteria:

(1) Indicators for measuring institutional performance on individual level (non-leadership positions):

- Indicator for measuring personality traits.
- Indicator for measuring behavioral and ethical characteristics.
- Indicator for measuring technical and functional qualification.

Individual performance can be calculated and estimated here by aggregating the arithmetical averages of the values of the three major indicators listed above in the following formula: $\mu\,(\mathbf{Ip1}) = [\Sigma(\mu\mathbf{1} + \mu\mathbf{2} + \mu\mathbf{3})]/\mathbf{3}$, (Table I).
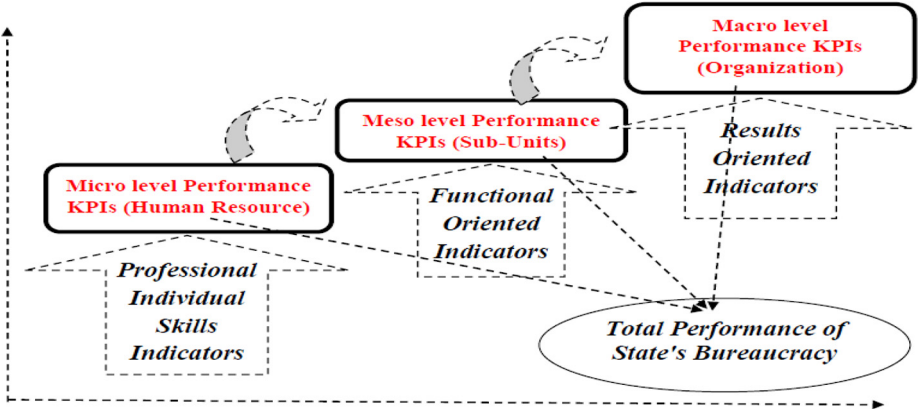
where

Figure 5.
Institutional performance measurement suggested model

Source: Authors

Major indicators	Sub-indicators	Relative weights of indicators[a] The achievement rate of each criterion divided by scale (100 basis points) (0:100%)	Estimating the indicator assessment[b] (1:5)
Personality traits criterion	IQ Strength of personality and firmness Flexibility Emotional and nervous control Persistence and endurance Self-confidence Independent character Mental openness level		
Total (Σ) Average (1 μ)		%	
Behavioral and ethical values and skills	Degree of integrity and honesty Degree of organizational tolerance Considerateness Impartiality and objectivity Tendency to trust others Positive cooperative spirit and reaching out to others Seriousness, discipline and hard work The skill of listening to others Persuasion Separation of personal matters and formal work environment		
Total (Σ) Average (2 μ)		%	
(B) Professional technical and functional indicators[c]			
Technical, functional and cognitive qualification indicators	Rate of achievement and productivity The ability to innovate and develop Quantitative and qualitative analytical capabilities Knowledge of IT Ability to solve problems and confront situations Minimum administrative management knowledge Organizational learning and self- development Scientific and academic excellence The level of familiarity with administrative law with its various issues and sector legislations Financial skills and building budgets Language skills Skills of presentation of information and effective communication		
Total (Σ) Average (3 μ)		%	

Notes: [a]For more illustration, see Ashour (2019); [b]This value can be calculated by dividing the ratio of each indicator on 20, to define the appropriate category of performance grade from those 5 grades as follows: Excellent Performance = 5, Efficient Performance = 4, Above Moderate Performance = 3, Fair Performance = 2, Weak Performance = 1; [c]Each of units or sub-units has its own vision concerning the formulation of it is own performance indicators + detecting it is own goals in the line with the whole organization one
Source: Authors

Table I.
A Set of personal and behavioral indicators for non-leadership positions μ (Ip1)

$\mu 1$ = is the mean value of personality indicators package.
$\mu 2$ = is the mean value of behavioral indicators package.
$\mu 3$ = is the mean value of functional indicators package.

(2) Indicators for measuring institutional performance on individual level (leadership positions):

Suggested sub-indicator including two main categories:

(1) Set of general qualifications for leadership positions indicators.

(2) Set of functional specified skills and qualifications for leadership positions indicators.

Individual performance can be calculated and estimated here by aggregating the arithmetical averages of the values of the nine major indicators listed above in the following formula: μ (**Ip2**) = $[\Sigma(\mu 1 + \mu 2 + \mu 3 + \cdots + \mu 9)]/9$ (Table II).

Thus, the total mean of individual performance (Ip) =

$$\mu \ (\mathbf{Ip}) = \ 0.5^* \left[\left(\sum \mu \ (\mathbf{Ip1}) \right) + \mu \ (\mathbf{Ip2}) \right]$$

(3) Indicators for measuring performance of a minor sub-organizational unit (Sector/central administration/public administration/subdivision) within a ministry, body, agency or service department and its relative weights (Table III).

Thus, the mean value of achieving unit objectives (O$_t$) =

$$\mu O_t = \sum \left[(W1 \times V1) + \ (W2 \times V2) + (W3 \times V3) + \ldots + (Wi \times Vi) \right] / n$$

Then, we can find out the total value of performance on sub-unit level (Sp) by calculating the (weighted average X$_i$) of both μO_t and μ (Ip) taking into consideration the suggested relative weight of both previous values as follows:

$$\mathrm{Sub-unit \ Performance \ Estimation}(Sp) = \sum i \left[(\ \mu \ Ot^*R1) + (\ \mu \ Ip^*R2) \right]$$

where

μ O$_t$ = Mean value of achieving unit objectives (on level of a sub-unit).
μ Ip = Mean of Individual Performance Indicators (on level of a sub-unit).
$R1$ = Suggested relative weight of sub-unit objectives.
$R2$ = Suggested relative weight of the same sub-unit performance indicators.

(4) Indicators for measuring performance of a public organization (general office of the ministry/general office of the governorate/public authority/agency/public institution/service directorate) and its relative weights (Table IV):

Also, as previously illustrated, the mean value of achieving organizational objectives (O$_t$) will be: $\mu O_t = \sum [(W1 \times V1) + \ (W2 \times V2) + (W3 \times V3) + \ldots + (Wi \times Vi)]$Then, we can find out the total value of performance on organizational macro level (Op) by calculating (weighted average X$_i$) of both μ O$_t$ and μ (Ip) taking into consideration the suggested relative weight of both previous values as follows:

Major indicators	Sub-indicators	Relative weights of indicators[a]	
		Achievement rate of each criterion divided by scale (100 basis points) (0: 100%)	Estimating the indicator assessment (1:5)

A. Set of general qualifications for leadership positions

Major indicators	Sub-indicators		
Personality traits criterion	IQ		
	Strength of personality and firmness		
	Flexibility		
	Emotional and nervous control		
	Persistence and endurance		
	Self confidence		
	Independent character		
	Mental openness level		
Total (Σ)		%	
Average (1 μ)			
Behavioral and ethical values and skills	How positive his/her relationship with subordinates		
	Degree of integrity and honesty		
	Degree of organizational tolerance		
	Considerateness		
	Impartiality and objectivity		
	Management and control of organizational conflicts		
	Ability to negotiate		
	Ability to solve complex problems		
	Tendency to trust others		
	Positive cooperative spirit and reaching out to others		
	Seriousness, discipline and hard work		
	Rate of achievement and productivity		
	The skill of listening to others		
	Persuasion		
	The ability to innovate and develop		
	Organizational justice and equality		
	Organizational learning and self- development		
	Separation of personal matters and formal work environment		
Total (Σ)		%	
Average (2 μ)			
Technical, functional and cognitive qualification indicators	Quantitative and qualitative analytical capabilities		
	Knowledge of IT		
	Minimum administrative management knowledge		
	Accurate knowledge of sector policies		
	Academic Excellence		
	The level of knowledge of administrative law with its various issues		
	Financial skills and setting budgets		
	Language skills		
	Skills of presentation of information and effective communication		
Total (Σ)		%	
Average (3 μ)			

(continued)

Table II.
Leadership performance indicators

		Relative weights of indicators[a]	
		Achievement rate of each criterion divided by scale (100 basis points) (0: 100%)	Estimating the indicator assessment (1:5)
Major indicators	Sub-indicators		

(B) Set of functional specified skills and qualifications for leadership positions

Major indicators	Sub-indicators	Achievement	Estimating
Strategic planning skill	Accurate study of sector details (past and present policies)		
	Calculating the current needs of society (or stakeholders), which the sector is required to fulfill (total demand for sector services)		
	Continual monitoring of demographic and demographic indicators in quantitative and qualitative terms with a view to including them in the plan		
	Monitoring the political, economic and social variables at the local level on a regular basis		
	Accurate knowledge of the circumstances of the regional and international environment affecting the sector policies directly or indirectly		
	Good identification of sectoral policy priorities commensurate with the resources of the sector		
	The skill of designing schedules to implement sector strategies		
	The skill of linking technical planning and financial planning (budget)		
	The skill of good distribution of the individual, collective and institutional roles of the plan or the axes of the strategy		
Total (Σ) Average (4 μ)		%	
Crises and critical times management	The ability to predict the various crises that the sector is likely to experience at some time		
	Designing urgent financial and technical plans to overcome future crises and including them in the sector strategies		
	The ability to face situations and difficult circumstances directly without evading or letting non-qualified persons deal with them		
	Responding rapidly to the needs of crisis-affected community groups to contain their harmful effects to the least extent		
	The ability to design models and process mechanisms to start work on recovery plans		
	Disseminating the culture of crisis management institutionally in the entities affiliated to the leader centrally and locally		
	The ability to learn effectively from current and past crises		
Total (Σ) Average (5 μ)		%	

Table II.

Major indicators	Sub-indicators	Relative weights of indicators[a]	
		Achievement rate of each criterion divided by scale (100 basis points) (0: 100%)	Estimating the indicator assessment (1:5)
Preferring the scientific approach as a method of management	Tendency to assess the sector's policies before, during and after implementation The ability to analyze the results and impacts of the sector policies using quantitative and qualitative analysis tools Continuing access to leading international experiences in the same field and carrying out in-depth technical research The tendency to develop the scientific abilities of the self and subordinates through encouraging study and scientific research into the affairs of the sector		
Total (Σ) Average (6 μ)		%	
Continuous development and improvement of the institutional and regulatory structure in the sector	The introduction of new sectoral policies and constructive reform proposals Engaging staff in management reform and development plans The ability to positively cite methods of development and techniques of administrative activity, whether from other sectors of the local or international counterparts or from the private sector Adopting the overall quality thought to develop the service or the product provided to citizens Continuous review of the methods of delivery of services to citizens Continuous improvement of the organizational work environment The ability to build partnerships and cooperation with the private and non-governmental sectors		
Total (Σ) Average (7 μ)		%	
Governance of administrative activity	Effective accountability, control and follow-up Level of loyalty and orientation towards the citizen (external client for sectoral policies) Spreading the values of organizational citizenship (the internal client of the sector in the form of a civil servant) Good governance of financial resources The level of respect for the law, regulations and multi-level decisions Degree of inclination for empowerment and delegation of authority Level of transparency and availability of information The trend to build the second-grade leaders in the sector		

(*continued*)

Table II.

| | | Relative weights of indicators[a] | |
| | | Achievement rate of each criterion divided by scale (100 basis points) (0: 100%) | Estimating the indicator assessment (1:5) |
Major indicators	Sub-indicators		
	Engaging subordinates in the decision-making process		
	Developing practical mechanisms to initiate community dialogue with citizens and stakeholders before devising policies		
	A survey of the opinions of citizens who deal directly with the sector to measure the degree of satisfaction with public and sector services on a semi-regular basis		
	The ability to build institutional and community interactive relationships with stakeholders		
Total (Σ)		%	
Average (8 μ)			
Responsibility for results, and productivity and achievement in terms of quantity and quality	The ability to scientifically analyze the causes and factors of the gap between what has been planned and what has actually been accomplished		
	Continuing assessment of sector outputs and overall performance rates compared to previous years		
	Direct access to the fields of work and projects to follow up on the achievements on the ground		
	Monitoring deficiencies and signs of negligence and serious abuses and punish those responsible		
	Reconsidering from time to time the methods of reward and punishment and motivation for the employees in the sector commensurate with the completion rates		
	Careful investigation of geographical areas and community segments that are wholly or partially deprived of the services of the sector		
Total (Σ)		%	
Average (9 μ)			

Note: [a]For more illustration, Ashour (2019)
Source: Authors

Table II.

$$\text{Organizational Performance Estimation(Op)} = \sum \mathbf{i} \left[(\mu \ \text{Ot*R1}) + (\mu \ \text{Ip*R2}) \right]$$

where:

μ Ip = Mean of individual performance indicators (on level of an organization).

μ O$_t$ = Mean value of achieving organization objectives (on level of an organization).

R1 = Suggested relative weight of organization objectives.

R2 = Suggested relative weight of the same sub-unit performance indicators.

Sub-organizational unit objectives[a] (suggested examples for illustration)	The relative weight of each objective (0-100%)	Target achievement ratio (0-100%)	Degree of target achievement on scale (1-5)	Result of evaluation (importance × degree of achievement)[b]
General achievement rate of the unit	W1		V1	–
Sub-project delivery timeframe at unit level	W2		V2	–
Average time of providing service to citizens	W3		V3	–
The number of daily transactions that are performed				
The average number of administrative or financial errors and irregularities across the unit				
Total	*100%*		*vi*	*Ot*

Notes: [a]This may be a different issue from one unit to other inside or outside organization. [b]For more illustration, Ashour (2019)
Source: Authors

In addition, there is another suggested way of organization performances estimation, which, in turn, based on calculating the mean average of the whole (Sp) values in one organization as follows:

$$\text{Organization Performance (Op)} = \sum \left(\frac{\mu\ Sp}{Ns} + \mu\ Ot \right)$$

where:

$\mu\ Sp$ = Mean of aggregated Sub-units Performance values.

Ns = Total Number of Sub-units in an organization.

$\mu\ O_t$ = Mean value of Achieving Organization Objectives (on level of an Organization).

(5) *The proposed general indicator to measure general performance of administrative body as whole*:

From the above the general equation for measuring public performance can be derived from the following formula:

$$\text{Total Governmental Public Administration Performance(Tp)}$$
$$= \frac{1}{3} * \sum i[\mu\ Ip + \mu\ Sp + \mu\ Op],:$$

where:

$\mu\ Ip$ = Individual performance mean.

$\mu\ Sp$ = Sub-units performance mean.

$\mu\ Op$ = Organization performance mean.

Another suggested way of total governmental public administration performance estimation, which, in turn, based on calculating mean average of the whole (Op) values as follows:

Overall objectives of the general organization (suggested examples for illustration)	The relative weight of each objective (0-100%)	Target achievement ratio (0-100%)	Degree of target achievement on scale (1-5)	Result of evaluation (importance × degree of achievement)
Sector growth rate	W1		V1	–
Percentage of the contribution of the sector managed by the authority in the gross domestic product of the state	W2		V2	–
Number of projects and programs completed in one year out of the annual projects included in the plan	W3		V3	–
The average annual revenues generated by the sector for the state treasury				
Sector contribution to public debt				
Percentage of surplus/deficit in the sector budget				
National or local projects completion time				
Total number of violations and involvement in corruption cases within the sector or organization				
The rate of increase in public investments and sector assets				
Total number of jobs chances provided by the sector annually				
The rate of increase in the number of beneficiaries of services sector				
Total	*100%*		*V_i*	*O_t*

Source: Authors

Table IV.
Mechanism of measuring organization performance

$$(Tp) = \frac{1}{Nx} * \sum (\mu Op + \mu 0n)$$

where:

Nx = Total number of major public bureaucracy organizations. μ *Op = Organization performance mean values.*

μ O_n = Mean value of achieving macro governmental objectives (on national level).

The overall indicators of the proposed model can be expressed in quantitative form in the following context (Figure 6):

Conclusion

In conclusion, the authors would like to put more emphasize on:

- Institutional performance is so complicated area of study, it is too difficult to compose one stereotyped model valid for all governmental or administrative contexts but at least the study approached some of the general criteria that could be matching with different organizational units applying on government sectors.
- The study depended on previous outlines deprived of other literature for the purpose of developing a new model with an integrated view to the concept of
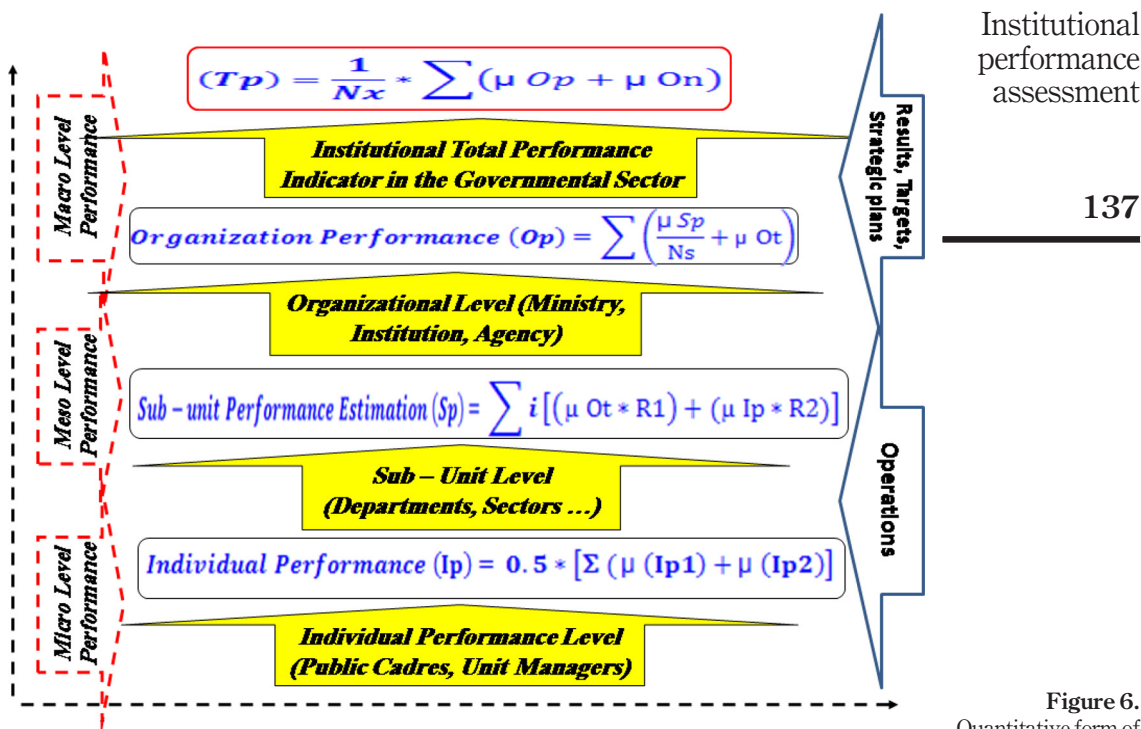
$$(Tp) = \frac{1}{Nx} * \sum (\mu\, Op + \mu\, On)$$

Institutional Total Performance Indicator in the Governmental Sector

$$Organization\ Performance\ (Op) = \sum \left(\frac{\mu\, Sp}{Ns} + \mu\, Ot \right)$$

Organizational Level (Ministry, Institution, Agency)

$$Sub-unit\ Performance\ Estimation\ (Sp) = \sum i \left[(\mu\, Ot * R1) + (\mu\, Ip * R2) \right]$$

Sub – Unit Level (Departments, Sectors …)

$$Individual\ Performance\ (Ip) = 0.5 * \left[\Sigma\, (\mu\, (Ip1) + \mu\, (Ip2)) \right]$$

Individual Performance Level (Public Cadres, Unit Managers)

Macro Level Performance

Meso Level Performance

Micro Level Performance

Results, Targets, Strategic plans

Operations

Figure 6.
Quantitative form of
the suggested model

Source: Same Research Authors

institutional performance on many levels: individuals (HR), sub-units and on the organizational level as well in the same time.

- One of the main objectives of authors was to express different dimensions of institutional performance quantitatively, thus they created relative weights for each category of the proposed KPIs model, then calculating mean value for each category, and then formulating mathematical simple aggregating equations to assess quantitatively the value of exerted performances in all levels as shown in the third axis.

- Each level of performance circles leads to a different one in an aggregated form.

- The issue of building performance indicators is a relative process to a great extent that each public body can design it is own model (s), in line with the nature of its functions, daily activities, and types of governmental services, which are undertaken professionally by each unit.

- Although the process of measuring the performance of the governmental institutions and sub-units is so difficult, it is not completely impossible at the same time.

Some of practical recommendations
To whom it may concern, authors recommend some issues for decision-makers and executives who are in charge of managing civil service affairs through:

- The proposed model could find some applicable usages in the area of assessing individual performances of governmental manpower, individual HR units for the purpose of preparing annual assessment reports concerning employees as base of promotion decisions.
- The proposed model could offer some practical categories on the level of recruiting, testing, and appointing highly ranked administrative leadership posts.
- Applying such proposed model could be good chance for detecting achievement rates for the coordinating administrative units in one sector or to compare both achievement and performances rates in between different sectors on the macro levels, then to define spots of commitment among governmental organization society, then designing proper administrative reform programs, which is fulfilling each case.
- In the long run or medium, the government might be able to assess successfulness weights concerning it is developmental programs, policies, and strategies on macro level performance of the whole state bureaucracy apparatus.

Proposed studies for future in the same line of topic
This study is just expressing designing a proposed model of measuring public performance, however, the issue of assessing public performance, in general, is a too fertile area of research that may create some additional dimensions in assessing the total aggregated format of the whole state is bureaucracy performance, such as:

- Measuring correlation in between performance and quality of services, quality of public policies and programs, performance and public satisfaction of citizens, all of these relations could be covered in more additional studies in the same line, and it could be expressed quantitatively with different types of KPIs.
- Applying and testing such a model in practice on some cases in the Arab world or in western bureaucracies.
- Applying the model could be also through sectoral studies perspective.

References

Afonso, A., Schuknecht, L. and Tanzi, V. (2003), "Public sector efficiency: an international comparison", Working Paper no. 242/July, European Central Bank, p. 10.

Anastassiou, T.H. and Doumpos, M. (2000), "Multicriteria evaluation of performance of public enterprises: the case of Greece", *Investigaciones European*, Vol. 6 No. 3, pp. 11-24.

Ashour, A.S. (2019), "Suggested guidelines framework on human resource performance management in government sector in Egypt", Central Agency of Organizing and Administration (CAOA), A.R.E, January.

Bolden, R., Gosling, J., Marturano, A. and Dennison, P. (2003), *A Review of Leadership Theory and Competency Frameworks*, Centre for Leadership Studies University of Exeter, June.

Boyle, R. (2006), "Measuring public sector productivity: lessons from international experience", CPMR Discussion Paper 35, Institute of Public Administration (IPA), pp. 1-48.

Dönmez, S. and Toker, Y. (2017), "Construction of a Likert-type transformational leadership scale", *DTCF Dergisi*, Vol. 57 No. 2, pp. 753-775.

El Araby, M. *et al.* (2019), "General guidelines for public administration high level leaders efficiencies measurements", Central Agency of Organizing and Administration (CAOA), A.R.E, January.

International Civil Service Effectiveness (InCiSE) Index (2017), Technical Report 2017, Blavatnik School of Government and the Institute for Government – Oxford University, U.K, available at: www.bsg.ox.ac.uk/incise

Kolkma, W. *et al.* (2016), "Guidelines for the evaluation of public sector operations", Independent Evaluation Department, Asian Development Bank (ADB), April.

Leoveanu, A. (2016), "Performance evaluation systems in the public sector", *Curentul Juridic – Juridical Current (en)*, Vol. 66 No. 3, pp. 26-38.

Mihaiu, D.M., Alin, O. and Pompiliu Marian, C. (2010), "Efficiency, effectiveness and performance of the public sector", *Romanian Journal of Economic Forecasting*, Vol. 4, pp. 132-147.

Puhakka, M. (2018), "Performance management in a public sector organization: Creating KPIs for a PSC web portal", Master of Business Administration, Business Informatics Program, Metropolia University of Applied Sciences, Helsinki, May.

Senior Executive Service OPM-USA (2019), available at: www.opm.gov/ses/competent.html

SIGMA Radius Leadership Effectiveness (2017), *Sample Report, Σ - Sigma Assessment Systems*, Sigma, Port Huron, MI, 17 January.

Further reading

Campbell, D.P. (2005), "The Campbell leadership index, an assessment of leadership characteristics, confidential results for pat sample", NCS Pearson, Minneapolis, MN, January.

Government of Saskatchewan – Canada (2015), "Leadership and management competencies: the Saskatchewan public service vision: the best public service in Canada", Government of Saskatchewan – Canada, December.

Holzer, M. and Charbonneau, E. (Eds), (2008), *Public Management and Administration Illustrated Vol. I: English (a Volume in a Multi-Lingual Collection of Diagrams)*, National Center for Public Performance, New York, NY.

Web references

www.cabinet-office.gov.uk/civilservice/scs/competences.htm

www.lg-employers.gov.uk/skills/leadership_comp

www.ncsl.org.uk/index.cfm?pageID=haycompletechar

www.army.mod.uk/linked_files/ag/servingsoldier/career/usefulinfo/files/pdf/OJAR%20Intro%20Booklet.pdf

www.astrazeneca.co.uk/careers/developingyourself/leadership.asp

http://ad.chinahr.com/jobads/philips/leadership.asp

www.geocities.com/gvwrite/9faces.htm

www.glp.vodafone.com/global.htm

Corresponding author

Mohamed Awad El Araby can be contacted at: mohamed.elaraby@feps.edu.eg