How projects can contribute to the performance of Brazil's public sector: A case study

Paulo Rafael Minetto Maceta
Universidade de São Paulo / São Paulo, Brazil
paulo.maceta@gmail.com
Fernando Tobal Berssaneti
Universidade de São Paulo / São Paulo, Brazil
fernando.berssaneti@usp.br

Abstract: The New Public Management introduces operations management´s concepts from private sector into public sector, one of these concepts is performance, that links system´s inputs and outputs. This case study analyses the linkage of Finance Department of São Paulo's project´ scopes with the three Es of performance (efficiency, effectiveness and economy).

Keywords: Performance, Projects, Public Sector

INTRODUCTION

Nowadays, the measurement of performance is an important topic in business and its concept is explored by management operations, being usually presented separating the concepts of productivity, efficiency and effectiveness, which involve the discussion of the relationships between inputs and outputs of a production system.

With the New Public Management (NPM), the public sector began a process of private sector concepts' introduction in order to improve its service's performance and customer-citizens' satisfaction. A performance concept in the public sector was given by Pollitt (1986) within the theory of the three Es in which the performance is divided into efficiency, effectiveness and economy.

This study aims to analyze the linkage of the Finance Secretary of the State of São Paulo's (SEFAZ-SP) largest projects' scope with the performance theory of three Es in the public sector through the comparison of each analyzed projects' potential to impact positively the efficiency, effectiveness and economy of services provided by SEFAZ-SP.

To achieve this goal, were raised the projects that integrate the Support Management and Integration of Brazilian Tax Authorities Program (Programa de Apoio à Gestão e Integração dos

Fiscos no Brasil - PROFISCO), the financing program of the Inter-American Development Bank (IDB) which focus on modernizing and improving the Brazilian tax authorities' performance, and that are running on SEFAZ-SP. The data were obtained through a request for the Citizen's Integrated Information System of São Paulo State for the following data: (1) the SEFAZ-SP projects that are running with PROFISCO's funding, (2) what are each project's investment's values, and (3) a description of each project.

Among the ongoing projects, we selected, through a Pareto analysis, the eight projects with the biggest investments in order to present a description of their scopes and perform the analysis of the linkage with the three Es' concepts. Finally, a joint projects' analysis was done aiming to assess their consistency with the mentioned theory.

LITERATURE REVIEW

Productivity, Efficiency and Effectiveness

Productivity is widely used in academic and business areas as a way to measure the performance of organizations, but there is still confusion in the use of the term. Andersson and Bellgran (2015) reinforced the highly utilization of productivity measurement, although there is no common definition for the term, being a challenge to find a definition that can be used in some specific productive sectors.

According to Sumanth (1984), the term productivity was used as the "faculty of produce" and, in the early 20s, the term productivity acquires a more precise meaning as the relationship between the outputs and the means used to produce these outputs.

Andersson and Bellgran (2015) defined productivity as how well a good or service were produced with a certain resources consume. In other words, when more and better goods are produced with the same resources, the productivity will be increased, or, when the same goods with the same quality are produced with fewer resources, productivity will also be increased.

Two important features of productivity are: it is related with the use and consumption of resources (inputs) and with the value creation, a concept aligned with outputs.

In a system, entries usually refer to the labor (direct or indirect human resources), materials, energy and capital (fixed assets, equipment and inventories). Outputs refers to products generated by the same system using the inputs described.

To deepen the performance measurement, the terms efficiency and effectiveness must be conceptualized, they also don't have a consensus definition and are confused with each other (Sumanth, 1984).

Efficiency is defined by Sumanth (1984) as the ratio between the current outputs by the outputs expected, on the other hand, Andersson and Bellgran (2015) supported the idea that efficiency is related to the internal production system of an organization and its performance, while, Radnor and Barnes (2007) conceptualized efficiency as the outputs divided by a process' inputs, aiming to productivity measurement and resources' utilization, and, finally, Teng (2014)

summarized efficiency as "doing things right".

Even disparate, the aforementioned efficiency's definitions converge to the fact that it is related to the efficient resource's use, either by comparing the expected outputs with the current outputs in the same inputs' consumptions' degree, or by comparing the expected and current inputs' consumption to obtain the same outputs, or even calculated by the ratio between current inputs and current outputs, focusing on the use of resources.

The definition of effectiveness also has divergences between authors. Sumanth (1984) defined it as the objective's achievement's degree, Andersson and Bellgran (2015) described effectiveness as having the focus outside of the organization, targeting the customer, and providing what customers wants, which is a very close to Radnor and Barnes' (2007) vision, that defined effectiveness as the notion of process' outputs' adequacy in relation to the company and customer needs, and finally, Teng (2014) summarized efficacy as "doing the right things".

It is usual the combination of efficacy with process' outputs, and, in a more precisely way, with the outputs' result and their suitability against market's requirement and organization's wishes. The figure 1 shows, in a graphically way, how the concepts of productivity, efficiency and effectiveness will be represented in a productive system.

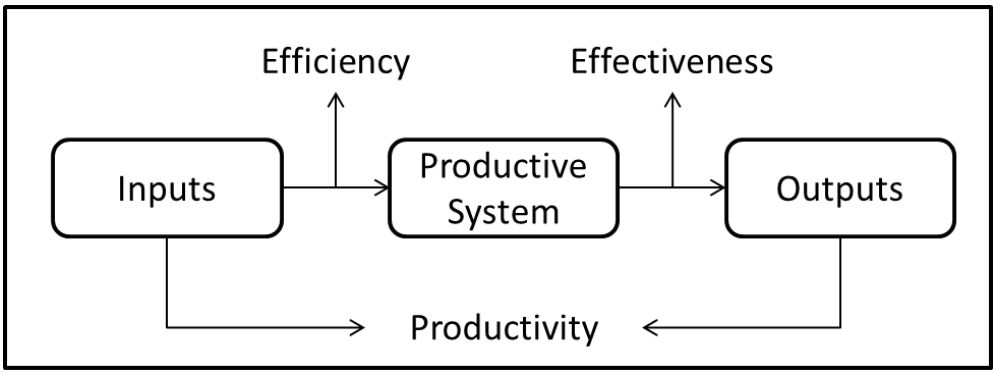

Figure 1 – Productive System. – Source: Modified of Sink and Tuttle (1989).

Public Sector Performance

According to Fryer et al (2007), the public sector is made of organizations that deliver governmental goods and services at local and national levels, pointing out that the key points that characterize the public sector are: (1) although there are financial controls and objectives, maximize profit isn't the main goal; (2) there are distinct areas for politics, management, and professional services that have to negotiate with each other; (3) there is a lack of clarity about who is its customers; (4) there are several stakeholders; (5) the management of the organization is subject to the political will and, when there is a change of political administration, also occur a management reorganization in the organization.

The constant search for performance improvements is a goal for the private and the public sector. Kwak and Anbari (2012) explained that the performance measurement in the government

sector continues to grow, supported by laws and pressure from citizens. The public spending with projects attract attention and demand transparency.

The NPM, according to Radnor and Noke (2013), made public organizations to focus on improving its internal operations by introducing a set of management techniques and methodologies to improve business processes. The NPM's paradigm, according to Silvestre and Araújo (2012), differs from the model adopted by the public sector in the end of the seventies, where the bureaucracy played a central role in political activities, what made the focus of public sector bureaucracy to be in the inputs instead of outputs or results. Decision-making processes were static and there were no efforts in promoting new ways to perform public services in order to be more efficient or effective.

Björk et al (2014) showed that NPM made that the public organizations become more alike the private sector, listing two features of this fact: achievement of internal processes' information and validation, and the pressure to keep a low public spending while the quality of the provided services are improved or maintained. Additionally, Curto and Dias (2014) assumed that the NPM, in the same way as any reform in public administration, has the dysfunctions' reduction as the main goal, and the decentralization as an essential process.

Pollitt (2002) listed the main guides of NPM: (1) a change of the managerial efforts from system inputs to outputs and outcomes; (2) a higher performance measurement; (3) the preference for a more autonomous and horizontal organization; (4) wider use of market tools; (5) enhancement and increased boundaries' permeability between the public and private sectors; and (6) a change in the values of the public sector, focusing on efficiency. This led the public sector to aim at continuous improvement and work with clear performance's goals, specifying costs and its intended results.

According to Crawford and Helm (2009), the public sector, after two decades of reform and concern about improving the performance, suffer the same pressure as the private sector to satisfy its stakeholders. To achieve this, the public sector must demonstrate accountability and transparency, and uses its projects to pursuit their strategic objectives. Rhodes et al (2012) explained that public organizations have begun to focus on the results, and, to meet the needs of public service customers, must to target on deliveries and outputs instead of inputs.

Deepening the discussion of performance in the public sector, Pollitt (1986) described the concept of the three Es, also called triumvirate of virtues, which defines the performance in terms of efficiency, effectiveness and economy. The definitions of the three Es elements are explained by Pollitt (1986) as: efficiency is the improvement in the ratio between inputs and outputs of a system; effectiveness is the service's impact degree; and economy is the reduction of public spending to provide the same service.

Parker et al (2013) argued that the model of the three Es is one of the two models most applicable to service's organizations' performance, and, despite the productivity of the public sector could be defined similarly the productivity of the private sector, the definition of outputs in the public sector requires a greater attention. Grönlund et al (2011) identified the three Es as the traditional elements for the public sector analysis due to the concepts being related to the

public sector's main activities: the economy focuses on reducing the resources' cost; efficiency explains the relationship between outputs and inputs used to produce goods or services; and the effectiveness measures the objectives' achievement extension.

It should be noted that the three Es don't always have the same behavior. On other words, an increase in one of the features by itself, will not lead, necessarily, to an increase in any other feature. Pollitt (1986) demonstrated the fact that the three elements don't walk together using three examples: (1) cost savings may reduce the effectiveness; (2) achieve efficiency may lead to a bigger money expenditure, affecting the economy; (3) achieve efficacy (e.g. increasing public service coverage) could lead to operations creation in remote locations, decreasing the efficiency of operations.

According to Jääskeläinen and Sillanpää (2013), the challenges of measuring performance in public organizations are related to the difficulty of solving the conflicts between the various stakeholders and defining a common goal for different stakeholders. To Azman et al (2013), public projects are essentially political and Crawford and Helm (2009) noted that the use of public funds for project execution attracts the media attention and could cause some political damage to the government responsible for its execution. Thus, it is certain that public projects need to be aimed to performance improvement in order to not been seen as a non-responsible expenditure.

FINANCE DEPARTMENT OF SÃO PAULO'S PROJECTS' ANALYSIS

Methodology

In this paper were used the case study methodology to analyze the data from SEFAZ-SP related to PROFISCO's projects and their suitability with the three Es' performance theory, understanding which of the three concepts are addressed by each project.

The case study is recommended for the analysis of complex situations and has the following characteristics: exploratory approach; understand of an environmental context; use of various sources; search for comprehensively reality understanding; observe the activities' execution; and represent different points of view. The various sources of information that could be used are interviews, documentation, record files, direct observations, participant observations, and others.

For this study were used two sources of data, namely: (1) Documentation: through a request for the Citizen's Integrated Information System of São Paulo, were raised all projects undertaken by PROFISCO in SEFAZ- SP with their investment value and a description of each project, and (2) Direct observations: one author of this study is an employee at SEFAZ-SP and could understand the context of the projects developed, even not acting directly with their execution.

Four steps summarize this study's methodology: (1) obtainment and preliminary analysis of PROFISCO's projects' data, (2) selection of high investment projects, through a Pareto analysis, (3) description and understanding of the selected projects, and (4) projects linkage with the three Es' performance theory analysis.

Project's selection and description

SEFAZ-SP is a department in São Paulo state administration that began its activities in 1892 and has the functions of tax, financial, budget, and credit administration. The department's mission is "To be recognized as a department of excellence in financial administration by public sector and society" and, to reach its mission, it develops several projects in order to improve its performance and excellence.

In 2006, due to a request of the Brazilian government, the IDB participated in the design of a new tax program to support the modernization of Brazilian states' fiscal management called Support Management and Integration of Brazilian Tax Authorities Program (Programa de Apoio à Gestão e Integração dos Fiscos no Brasil - PROFISCO).

The PROFISCO was structured to achieve the following objectives: improvement of the investment's environment, improvement of the tax's system, tax authorities' integration, and strengthening fiscal federalism. These objectives try to achieve the modernization and improvement of Brazilian tax authorities' performance. Today more than twenty Brazilian states participate in PROFISCO.

In the middle of 2015, SEFAZ-SP had thirty eight projects with the IDB's program funding, with a total funding of R$ 298,745,293.05. A Pareto analysis was made and the largest eight projects were selected, which have, individually, investments bigger than ten million Brazilian reais, and represent together 65.2% of the total PROFISCO funding. The projects selected are:

- Project 1 – The project involves the construction of five tax's services' offices, acquisition of furniture and visual identification for the new physical structures, upgrading equipment and training the frontline staff.
- Project 2 – The project aims to the expansion of electronic document's storage's capacity for all SEFAZ-SP's units and departments.
- Project 3 – The project objectives the implementation of the new version of Electronic Purchase System defining, building, and implementing the information, navigation and database architecture.
- Project 4 – The project consists in the development of a costs' system and the definition of a costs' methodology with the development of the procedures and policies manuals.
- Project 5 – The project focus on the development of communication between the SEFAZ-SP's staff with the integration of communication channels (telephone, e-mail and workspaces), and improvement of tools and mechanism for remote access through mobile devices. The project covers the physical and technological structure and the creation of standards and procedures.
- Project 6 – The project has the aim to cover the physical structures' renovation of SEFAZ-SP's training department's central unit and two regional units. The project includes updating computer's equipment and purchasing new furniture.

- Project 7 – The project focus in the creation of a tax services' website that will be a single portal for electronic relationship with the taxpayer.
- Project 8 – The project aims to the implementation of an electronic system to monitor, in real time, the São Paulo state financial data. The system should include reports for strategic, tactical and operational SEFAZ-SP's staff.

Discussion about the selected projects

All PROFISCO's projects aim to improve the performance of SEFAZ-SP. Each project presented above was individually assessed focusing in the potential positive impact they could have on each of the three Es theory's elements (efficiency, effectiveness and economy) relating them with SEFAZ-SP's services provided for São Paulo's citizens. The results are shown below:

- Project 1 - The expansion of tax's services' offices brings the SEFAZ-SP's staff closer to citizens, what makes the services more easily accessed by the citizens. The enlargement of the number of citizens who are able to use the services of SEFAZ-SP enhances the results of services, increasing the effectiveness of services. However, the processes are not changed, maintaining the efficiency at the same level and does not reduce the service´s execution costs, which makes the economy don't been affected by the project.
- Project 2 - With digital document's storage's capacity expansion, the processes' efficiency within the SEFAZ-SP tends to increase, as the processes that rely on documentation will become faster. However, this won't generate any costs' savings nor an increased service's effectiveness because it will not change the process outputs.
- Project 3 - The new version of Electronic Purchase System the Sao Paulo state's won´t change the purchases' bidding process, because it will be necessarily to follow the same legal procedures, maintaining the same efficiency. There is, however, an improvement in process effectiveness, because, with a new system that has a better and easier usability, a larger number of suppliers could participate in the bidding process and offer lower prices, improving the results of the São Paulo state's procurement service. Performing the acquisitions at a lower cost, the purchase process economy will be improved.
- Project 4 - The implementation of a costs' system makes the costs' allocation's process faster and automatic, increasing the process efficiency. The effectiveness is also increased because the system will reduce errors in costs' allocation's process, improving its outputs. It will also increase the process' economy, because it will reduce staff's allocation for the process, that will be replaced by electronic automated process.
- Project 5 – Through the creation of tools and mechanism that facilitate the communication and collaboration between the public service's staff, there will be an improvement in the efficiency of work performed by them, due to reduction of the delays related to information's access' inefficiencies. The effectiveness will also be impacted because, when the staff starts to work with collaboration, operations and analysis become

more effective, avoiding results' failures. Finally, the economy will not be changed because the costs involved in the process will keep unchanged.

- Project 6 – The SEFAZ-SP's training's department is responsible for SEFAZ-SP's staff's training, its renovation and technological upgrade would not affect organization's efficiency, effectiveness and economy directly. However, the staff's training will generate, in the long run, improvements in all three measures, because, when the staff have better skills and capacities, they will be more effective in performing their functions, proposing new ways of doing business, that will lead to improvement in the processes' economy and efficiency.
- Project 7 - The electronic relationship's model brings a new approach to SEFAZ-SP, changing the taxpayer's notifications from physical methods to electronic attendance. The project does not alter the effectiveness of the operation because it changes only the way in which the taxpayer is contacted, but does not change the notification's results. The economy is increased because SEFAZ-SP saves the costs related to the staff transportation to do the physical taxpayer's notification, avoiding unnecessary costs. Also, the location of the taxpayer become easier, increasing efficiency.
- Project 8 - This project aims to deliver data faster and with greater focus for the various SEFAZ-SP areas. The processes by which these data will be processed and analyzed will not be changed, what means that efficiency will not change. On the other hand, the effectiveness will be improved because the more information available, the more will be the compliance with all the legal obligations. the costs won't be changed not affecting the process' economy.

CONCLUSIONS

The complete results of the project's analysis performed in the previous section are presented in Table 1, which shows the linkage of the projects' scopes with the three Es' performance theory. The concept that was addressed by more projects is the effectiveness, in 75% of projects. Efficiency was addressed by 62.5% of the projects and the economy by 50% of the projects.

Table 1 - linkage of the projects' scopes with the performance theory of three Es.

	Efficiency	Effectiveness	Economy
Project 1		X	
Project 2	X		
Project 3		X	X
Project 4	X	X	X
Project 5	X	X	
Project 6	X	X	X
Project 7	X		X
Project 8		X	

It is also important to note that the selected SEFAZ-SP's projects, analyzed in this study, addresses all elements of the three Es' performance theory in a greater or lower degree, demonstrating the validity of the concepts in the study of the public service provided by SEFAZ-SP for São Paulo state's citizens. The results also demonstrate that the PROFISCO's investments, represented by the sample analyzed, which represents 65.2% of total PROFISCO's investments in SEFAZ-SP, are reaching the IDB's goal of improving the São Paulo's tax authorities' performance.

This study has clear limitations related to the sample used to analyze the performance´s improvement in public sector, the sample doesn't cover all the service's range provided. Other kind of limitation is related to the study case methodology that is not easily reproduced and the results may not be generalized for other situations.

Future researches can be developed in order to expand the analysis in mainly two ways: may be extended in PROFISCO level covering projects of other Brazilian tax authorities, or may be expanded at the level of SEFAZ-SP, analyzing all the organization's projects funded and not funded by PROFISCO. Others performances theories could also be added to the analysis to confirm the linkage of them with the public services.

Bibliography

Andersson, C., M. Bellgran. 2015. On the complexity of using performance measures: Enhancing sustained production improvement capability by combining OEE and productivity. *Journal of Manufacturing Systems* **35**:144-154.

Azman, M. A., Z. Abdul-Samad, S. Ismail. 2013. The accuracy of preliminary cost estimates in Public Works Department (PWD) of Peninsular Malaysia. *International Journal of Project Management* **31**(7): 994–1005.

Björk, L., S. Szücs, A. Härenstam. 2014. Measuring capacity to perform across local government services – managers' perception. *International Journal of Public Sector Management* **27**(1): 26-38.

Crawford, L. H., J. Helm. 2009. Government and Governance: The Value of Project Management in the Public Sector. *Project Management Journal* **40**(1): 73–87.

Curto, H.S., A. Dias. 2014. Administrative reforms and performance of local public policies. *International Journal of Public Sector Management* **27**(6): 462-474.

Fryer, K. J., J. Antony, A. Douglas. 2007. Critical success factors of continuous improvement in the public sector: A literature review and some key findings. *The TQM Magazine* **19**(5): 497–517.

Grönlund, A., F. Svärdsten, P. Öhman. 2011. Value for money and the rule of law: the (new) performance audit in Sweden. *International Journal of Public Management* **24**(2): 107-121.

Jääskeläinen, A., V. Sillanpää. 2013. Overcoming challenges in the implementation of performance measurement. *International Journal of Public Sector Management* **26**(6): 440-454.

Kwak, Y. H., F. T. Anbari. 2012. History, Practices, and Future of Earned Value Management in Government: Perspectives From NASA. *Project Management Journal* **43**(1): 77–90.

Parker, D., K. Waller, H. Xu. 2013. Private and public services: productivity and performance migration. *International Journal of Productivity and Performance Management* **62**(6): 652-664.

Pollitt, C. 1986. Beyond the managerial model: the case for broadening performance assessment in government and the public services. *Financial Accountability & Management* **2**: 155-170.

Pollitt, C. 2002. Clarifying convergence: striking similarities and durable differences in public management reform. *Public Management Review* **4**(1): 471-492.

Radnor, Z.J., D. Barnes. 2007. Historical analysis of performance measurement and management in operations management. *International Journal of Productivity and Performance Management* **56**(5/6): 384-396.

Radnor, Z.J., H. Noke. 2013. Conceptualizing and contextualizing public sector operations management. *Production Planning & Control: The Management of Operations* **24**(10-11): 867-876.

Rhodes, M.L., L. Biondi, R. Gomes, A. I. Melo, F. Ohemeng, G. Perez-Lopez, A. Rossi, W. Sutiyono. 2012. Current state of public sector performance management in seven selected countries. *International Journal of Productivity and Performance Management* **61**(3): 235-271.

Silvestre, H.C., J. F. F. E. Araújo. 2012. Public-private partnerships/private finance initiatives in Portugal. *Public Performance & Management Review* **36**(2): 316-339.

Sink, D.S., T. C. Tuttle. 1989. *Planning and measurement in your organization of the future*. Industrial Engineering and Management Press, Norcross.

Sumanth, D.J. 1984. *Productivity engineering and management.* McGraw-Hill, New York.

Teng, H.S.S. 2014. Qualitative productivity analysis: does a non-financial measurement model exist? *International Journal of Productivity and Performance Management* **63**(2): 250-256.