Economic Sciences, Management and Commercial Sciences Review

Volume:12 / N°: 03 (2020), p 619-632

Improving public sector organizations' performance through the application of benchmarking – TRADE benchmarking model Case studies: from Dubai public sector organizations

Iman ACHOUR [1], Karim BICHARI [2]

[1] University of Blida 2-Algeria, achour-imane@live.fr,

[2] University of Blida 2-Algeria, karimbichari@yahoo.com,

Received: 27/05/2019 **Accepted: 11/03/2020** **Published03/04/2020**

Abstract:
The purpose of this paper is to examine the relationship between public sector organizations' performance and benchmarking. This study is based on case study methodology where data were collected from various resources. The results from Dubai government entities that applied TRADE benchmarking model show that there is a significant impact of benchmarking application on performance improvement. The first case was the mechanical department of Dubai police that could increase vehicle availability and labor productivity. The second one was Dubai Municipality that also managed to increase the percentage of purchase requisitions processed within specific period of time.

Keywords: public sector organizations, performance, benchmarking, TRADE benchmarking model, Dubai.
Jel Classification Codes: H83

Corresponding author: Iman Achour, e-mail: achour-imane@live.fr

1. INTRODUCTION

Even though benchmarking originated in private sector but soon found applications in public sector and its usage in the latter sector has grown exponentially over the past years. Local government can derive public value from benchmarking in a number of ways. Unlike private sector organizations applying benchmarking as tool for continuous search for the best practices all over the world and apply them in order to improve the performance, basically, for the sake of surviving and facing the intensive competition. However, public sector organizations have started to adopt this tool, which has proved itself as an effective way for performance improvement. As the pressure on governments to improve the quality of public services has reached a new intensity and in the light of lack financial resources mostly push them to look for the best practices to cut costs while enhancing service delivery and to improve economy, efficiency, and effectiveness in the public sector.

There are numerous different models of benchmarking that can be applied, but in this paper we shed light on TRADE benchmarking model that has been applied by many different public sector organizations worldwide and it has been proven successful. It is well known that Benchmarking is increasing in popularity as a tool for continuous improvement and acts as vehicle to improve performance, therefore our main question that we have tried to address through this paper is: **How does the application of benchmarking contribute to improving public sector organizations' performance?**

This above main question leads us to the following subquestions:

- What is the TRADE benchmarking model?
- Does the application of benchmarking in the public sector differ from its application in the private sector?
- What kind of relationship exists between performance and benchmarking?

- How did Dubai public sector organizations put TRADE benchmarking model into practice, and how did that affect the performance of those organizations?

In order to answer the questions above, we structured this paper as follows: in the first part, we study the literature on benchmarking including: evolution, definition, types, TRADE benchmarking model, benchmarking in public sector and importance of benchmarking in enhancing performance of public sector. In the second part, we show some cases studies from Dubai in which TRADE benchmarking model was used, the first case is about Dubai police experience in vehicle fleet maintenance, and the second one is about experience of Dubai municipality. Finally, the conclusion reached in this study is exposed.

2. Literature Review:

2.1. Evolution of benchmarking:

The Japanese are generally given credit for inventing the concept through their practice of sending managers to visit a wide range of companies as way to understand and learn from good business practices. Taichi Ohno, for instance, tells how Toyota adopted a new inventory system after a visit to a US supermarket in 1956. Ohno spent his time studying and learning about the supermarket's inventory replenishment system. From his observations of supermarket shelf-stocking, he subsequently developed the concept of JIT (Pervaiz & Mohammed, 1998, p. 226).

The term "benchmarking" emerged when the idea took ground in US during 1980s when Xerox, Ford and Motorola became the pioneers of benchmarking in USA. Robert Camp, the logistics engineer who initiated Xerox's benchmarking program and who is generally regarded as the guru of the benchmarking movement (Dragolea & Cotîrlea, 2009, p. 813).

Xerox" has compared its' products to the ones of a Japanese organization called "Fuji-Xerox". The focus was to determine how the Japanese manufacturer sells its' products on the market of photocopying equipment at a lower cost of production costs of "Xerox".

Afterwards, "Xerox" bought the Japanese products, separated the appliances technically, discovered the way of production and measured the costs of every phase of production, while the costs of production, ways of servicing equipment and other aspects of business. This has resulted in the increase of economy, productivity and created innovation in manufacturing. "Xerox" has learned how to improve the quality of its products, cut costs and prices of products (Babović, Raičević, & Carić, 2012, p. 117) .

In the later years the importance of using benchmarking has been realized by the government of United States and was awarded with the prestigious Malcolm Baldridge National Quality Award. In the early 80's and 90's benchmarking techniques was considered as a popular tool for quality management help the managers to think about more innovative ways and methods to improve the performance (Attiany, 2014, p. 42). Even though benchmarking originated in the manufacturing sector, but soon found applications in, first, private and then public parts of the service sector (Francis & Holloway, 2007, p. 173).

2.2. Definition of benchmarking:

Many authors have defined benchmarking in many different ways; however, they did not view it with the same meaning. We are going to mention some of definitions:

- Benchmarking is a useful and high-quality tool to help company to continuously improve own process by learning how other companies to carry out this process, which includes an estimation of its own operational processes and the identification, study and adapt the best practices from the other companies (Goncharuk, Lazareva, & Alsharf, 2015, p. 27).

-According to Camp is the search for industry best practices that will lead to superior performance. This definition is broad enough to accommodate all levels or types of practices to benchmark (Fong, Cheng, & Ho, 1998, p. 408).
- The American Center for Productivity and Quality considers benchmarking to be a systematic and constant process of measuring and comparing business processes of one organization to business processes of a leader on the world's market in order to gain information that will help the organization take action to improve their performance (Krishnamoorthy & Dlima, 2014, p. 345).
- Leibfried and McNair define benchmarking as an external focus on internal activities, functions or operations in order to achieve continuous improvement (Moriarty & Smallman, 2009, p. 486).
Although with the existence of different definitions of benchmarking, however, all authors agreed on the importance of benchmarking to improve performance of organizations by searching for the best practices all over the world.

2.3. Types of benchmarking:

Several classifications of benchmarking are recorded in the literature. The main categorizations are internal, competitive, functional and generic benchmarking. For ease of use the literature may be divided into two parts: internal and external benchmarking. In this context, competitive, functional and generic benchmarking will be classed under external benchmarking. Each is briefly explained below (Kozak & Nield, 2001, p. 10):

a. Internal benchmarking: covers two-way communication and sharing opinions between departments within the same organization or between organizations operating as part of a chain in different countries. Once any part of an organization has a better performance indicator, others can learn how this was achieved.

b. Competitive benchmarking: refers to a comparison with direct competitors only. This is accepted as the most sensitive type of benchmarking as it is very difficult to achieve a healthy collaboration and co-operation with direct competitors and reach primary sources of information. As a result, this type of benchmarking is believed to be more rational for larger businesses than smaller ones.

c. Functional benchmarking: refers to comparative research carried out not only against competitors but also of those who are not in direct competition, but operating in similar fields and performing similar activities.

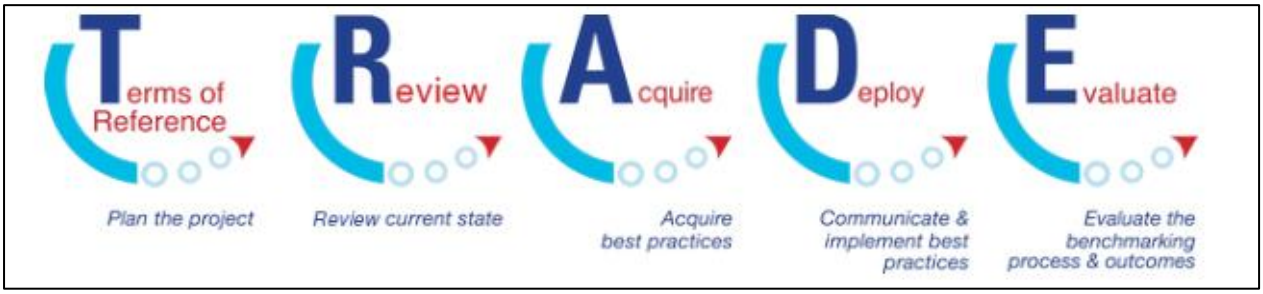
d. Generic benchmarking: attempts to seek world-class excellence by comparing business performance not only against competitors but also against the best businesses operating in similar fields and performing similar activities or those having similar problems but in a different industry.

2.4. TRADE benchmarking model

There are numerous different models of benchmarking process (they differ in number and name of phases) but all models have the same essence (Marković, Dutina, & Kovačević, 2011, p. 304).
The TRADE Best Practice Benchmarking Model was developed by Dr. Robin Mann for on the exchange (or "trade") of information and best practices to dramatically improve the performance of processes, goods and services. TRADE provides a systematic and powerful approach to learn from other organizations. Also, it is used by all types of private and public sector organizations (www.bestpracticecompetition.com, 2018) .
The TRADE model consists of five stages with each stage made up of between four and nine steps.

These are presented in following figure

Fig.1. TRADE benchmarking stages



Source: www.bpir.com

a. Terms of Reference – plan the project

The first stage is to plan the project. This stage involves forming a project team and obtaining the support of a project sponsor and developing the Terms of Reference (TOR). The Terms of Reference, provides the foundation for a successful project and should include a clear aim, scope, expected benefits, resources required, expected time-line and identification of stakeholders with a clear communication plan to ensure that the stakeholders are engaged in the project from start to finish. The terms of reference are determined at the start of the project and are reviewed continually throughout the project. This stage consists of nine steps as following:

- ✓ Determine area of focus for benchmarking project.
- ✓ Develop project brief.
- ✓ Form project team.
- ✓ Train project team.
- ✓ Understand benchmarking code of conduct
- ✓ Prepare Terms of Reference (TOR)
- ✓ Develop documentation system
- ✓ Review project progress and TOR
- ✓ Obtain approval to start the next stage of TRADE

b. Review current state

The second stage involves reviewing the extent of the current problem or issue. This stage ensures that the project team has a thorough understanding of its own organization's systems, processes and performance before learning from other organizations and helps to identify precisely the areas for which best practices will be sought.

This stage seeks the views and obtains data from the various stakeholders that are being impacted by the process. Surveys, structured interviews, focus groups, self-assessments, Ishikawa diagrams, process mapping, and brainstorming are used to obtain and evaluate the information obtained. Often as a result of conducting the Research stage refinements to the terms of reference are made. This stage consists of six steps as following:

- ✓ Understand area of focus to be benchmarked
- ✓ Define performance measures
- ✓ Identify current performance

- ✓ Prioritize and finalize the practices to be benchmarked
- ✓ Review project progress and TOR
- ✓ Obtain approval to start the next stage of TRADE

c. Acquire best practices

This stage involves identifying which organizations are likely to have superior practices and finding out what they do differently. This is an important stage where the team gets an opportunity to analyze and understand the processes and practices of other organizations and compare these to their own. There are nine steps in this stage as mentioned below:

- ✓ Establish criteria for selecting benchmarking partners
- ✓ Select potential benchmarking partners
- ✓ Invite and acquire benchmarking partners
- ✓ Prepare for data collection
- ✓ Collect and store data
- ✓ Analyze data
- ✓ Formulate recommendations best practices
- ✓ Review project progress and TOR
- ✓ Obtain approval to start the next stage of TRADE

d. Deploy – communicate and implement best practices

This stage involves communicating the team's recommendations to the project sponsor and relevant stakeholders, deciding what should be changed with the current practice or process and implementing the changes. This stage involves adapting the best practices to fit the organization's profile and may involve piloting the change before full deployment. This stage consists of six steps as following:

- ✓ Communicate findings
- ✓ Develop action plan
- ✓ Obtain approval for action plan
- ✓ Implement actions
- ✓ Review project progress and TOR
- ✓ Obtain approval to start the next stage of TRADE

e. Evaluate – evaluate the benchmarking process and outcomes

This stage is designed to make sure the project has delivered the expected benefits that were outlined in the Terms of Reference. It involves undertaking a cost and benefits analysis and a general review of how well the process is performing. There are four steps in this stage as presented below:

- ✓ Perform cost /benefit analysis
- ✓ Review TRADE project
- ✓ Share experiences and project outcomes
- ✓ Close project

2.5. Benchmarking in public sector:

Public sector usage of benchmarking has grown exponentially over the past two decades. This growth has been especially apparent in the health and infrastructure industries and projects that have involved contracting out of public services. Literature on this subject has been found dating back to

the early 1990s and much of it has focused on directly porting the private sector benchmarking experience to the public sector, but with mixed results. However, some authors argue that there are differences between benchmarking in the private and public sectors which mainly are:

- Benchmarking in private sector always seeks the best practice in a given field, while public sector benchmarking usually produces results that are satisfactory, but not necessarily the best;
- Benchmarking in the private sector is seen as an internal management tool and its application is voluntary. Benchmarking in the public sector can be voluntary, but its application is often compulsory;
- Knowledge gained through private sector benchmarking can be considered private property and thus does not have to be shared. Knowledge gained through public sector benchmarking can be considered public property and thus should be shared.

Essentially, what all three of these differences assume is that the public sector does not seek value-for-money (Milosevic, Djuric, Filipovic, & Ristic, 2013, p. 367). Also, when benchmarking has expanded its context from private sector into public sector we face new challenges. The basic nature of public services is not to compete with each other, but rather they have been established in order to provide best possible services as effectively and efficiently as possible. If one organization succeeds in providing excellent solutions it is supposed to be open for others as well. The focus is more on cooperation rather than on competition. This concerns also international arenas. Of course this becomes more complicated when public and private sector's practices are mingled and they for example, offer similar services with genuine competition (Kyro, 2003, p. 216).

2.6. Importance of Benchmarking in enhancing performance of public sector:

Despite the differences between the public and private sectors, there is enough commonality in how these organizations run to make meaningful comparisons. Understanding the relative cost, quality, and quantity of services delivered by different institutions is enormously valuable. Comparing different government departments in the same country, similar government activities in different countries or comparable activities in the private sector can provide the insight needed to shape performance improvement efforts.

First, comparisons help define performance ambitions. For example, the OECD's Programme for International Student Assessment (PISA) was introduced in 2000, Germany's lower-than- expected ranking came as a surprise to many Germans. "PISA-shock" sparked a national debate and significant reform, which led to rising PISA scores each year, driving Germany from 20th in reading in 2000 to 16th in 2009 and from 16th in mathematics in 2003 to 10th in 2009.

Second, detailed comparisons of similar operations across different public and private organizations show how different institutions operate and which practices yield superior results (Bouvard, et al., 2011, July 8-10). By identifying the "best" practices, organizations know where they stand in relation to other organizations. The other organizations can be used as evidence of problem areas, and provide possible solutions for each area. When companies benchmark, they use partners to share information with and learn from each other. Benchmarking allows organizations to understand their own administrative operations better, and marks target areas for improvement. It is an ideal way to learn from other organizations that are more successful in certain areas. Additionally, benchmarking can eliminate waste (Elmuti & Kathawala, 1997, p. 231). For example, the functions of a tax department –receiving submissions, examining them, collecting the tax and providing taxpayer services- are similar across the range of tax regimes. A McKinsey benchmarking study of 13 tax administrations around the world found that none was best in class across all activities, so all

the administrations had something to learn from studying tax practices employed elsewhere.
Finally, understanding how peer nations and organizations perform helps leaders identify possible performance-improvement approaches and tailor them to their specific economic and political contexts (Bouvard, et al., 2011, July 8-10). Benchmarking allows companies to learn new and innovative approaches to issue facing management which, in turn, provides the basis for training. Benchmarking acts as vehicle to improve performance by assisting in setting achievable goals that have already been proven successful. It overcomes disbelief that there are, by example, other ways of achieving and creating overall enhancement of an organization (Elmuti & Kathawala, 1997, p. 231) .

3. Case Studies from Dubai public sector organizations

In 2015, the Dubai Government Excellence Programme (DGEP) launched the 'Dubai We Learn' initiative as a platform to assist government entities to develop an organizational learning culture which would support innovation and a citizen-focused approach to delivering government services. This initiative would act as a springboard for the government entities to learn new skills and acquire new tools and techniques that would serve them well into the future.

The DWL one-year benchmarking programme consisted of benchmarking training (TRADE Benchmarking Model), research and facilitation support for 13 benchmarking project teams. Each project team was based in a different government entity and the foci of the benchmarking project were chosen to reflect the priorities of the different entities.

Two of the 13 benchmarking projects that were a part of the DWL initiative were the Dubai police and the Dubai Municipality. We are going to present each case in detail as follows.

3.1. Case Study One: Dubai Police Experience in Vehicle Fleet Maintenance

Dubai Police were one of the government entities that participated in "Dubai We Learn" initiative, a one year program consisting of a range of knowledge sharing and organizational learning activities designed to fast-track organizational improvement and stimulate innovation.
The Mechanical Department is one of the key operational departments of Dubai Police. It is a technical department that focuses on the maintenance and repair of vehicles to ensure optimum and best use of Dubai Police vehicles. The department has seven main specialized sections with more than 150 employees. The Mechanical Department undertook benchmarking project that entitled " Call of Duty: Police Edition- Best practices in vehicle fleet maintenance" in order to find and implement best practices in vehicle fleet maintenance to improve vehicle availability and labor productivity of the Dubai Police Mechanical Department to world-class levels.

A key part of this initiative has been the mentoring of benchmarking projects by Dubai Government Excellence Program (DGEP) partner the Centre for Organizational Excellence Research, New Zealand. Project teams used the TRADE Best Practice Benchmarking Model. A Dubai Police's benchmarking project started in October 2015 and finished in September 2016. A summary of Dubai Police's benchmarking project is presented below:

a. Terms of Reference stage:

This was the first stage of TRADE benchmarking model used by Dubai Police Mechanical

Department's benchmarking team. At this stage, the team developed a clear purpose of what they wanted to achieve, specify the resources required, and what was expected in terms of financial and non-financial benefit.

Project Aim: The specific targets set were to increase productivity for the Mechanical Department from 40% to 70% and increase vehicle availability from 88% to 95%.

b. Review stage:

The team conducted an extensive review of factors that were impeding labor productivity and vehicle availability. This involved SWOT analysis, fishbone analysis, surveying the opinions of mechanics, analyzing job sheet data, and deciding on the most important performance measures to use. The main areas of concern were identified as spare parts management and storage, equipment, material and tools availability, manpower and labor capabilities, and the Fleet Focus Management System (as the maintenance data was found to be inaccurate and not supportive of management decision making). Through this analysis the scope of the project changed from focusing on a total fleet of 3,600 vehicles to the 800 police patrol vehicles as these were most critical to police operations.

c. Acquire stage:

At the beginning of the 'Acquire' stage, Dubai Police defined 12 criteria for the selection of potential benchmarking partners. These criteria were selected to reflect the priorities of the project. Thereafter, the team brainstormed potential benchmarking partners as well as the ways in which 'acquisition' would be carried out (e.g. site visit, internet research).

Potential Benchmarking partners were then approached and ultimately, nine organizations were visited for the purposes of benchmarking exchange. The nine organizations were 3M, Kia – Al Majid Motors Company, BMW – Arabian Gulf Mechanical Centre, Mazda – Galadari Automobiles Co, Al-Futtaim. Ducab, Avis Repair Centre and STREIT Group and Higher Colleges of Technology (HCT). At the end of this stage, the team had identified a total of 35 improvement ideas.

d. Deploy stage:

In this stage, the team assessed all 35-improvement ideas for potential based on set criteria. Meetings were then held with all stakeholders to communicate the findings from the benchmarking project and get their commitment to deploy the improvement actions.

Key activities implemented at this stage included data cleansing, closing of the Bur-Dubai mini workshop to improve efficiency, creation of a shift pattern for workers and the setting up of a spare parts demand management system. In addition, workshop audio visual screens were set up to improve visual management and cost and productivity calculations were made. With particular regard to the mechanics, an incentive scheme and working hour's management system were set up.

e. Evaluate Stage:

In the final stage of benchmarking project, the team evaluated the results that showed an increase in labor productivity from 40% to 72.2% (exceeding the target of 70%) as well as an increase in vehicle availability from 88% to 95%. This has resulted in a saving of 14 million AED with future savings estimated to be in excess of 20 million AED. The increase in labor productivity contributed to a saving of 5,120,367 AED and the increase in vehicle availability led to extra savings of 8,680,000 AED (the elimination of 'replacement' costs of about 40 vehicles) (blog.bpir.com, 2018).

3.2. Case Study Two: Dubai Municipality Experience

The Dubai Municipality was founded in 1954; it works in thirty-four departments under six sectors, namely: International Affairs & Partnership Sector, General Support Sector, Environment Health & Safety Control Sector, Environmental & Public Health Services Sector, Planning & Engineering Sector, and Corporate Support Sector. As such, the municipality is one of the largest governmental entities in terms of services and project load, closely related to the growth and development of Dubai.

The Dubai Municipality Benchmarking project was a part of the 'Dubai We Learn' initiative which was launched in October 2015 and finished in September 2016. The aim was to identify and implement best practices in purchasing in order to increase the percentage of purchase requisitions processed.

The Municipality succeeded in streamlining their procurement system. Within a year of the program's commencement, they were able to save precious time and money, an achievement that was crowned with a 7-Star prize from the Dubai Government Excellence Program (DGEP). In addition to that, Dubai Municipality was nominated among 36 other international entities adopting best practices and was acknowledged as one of the top 5 Best International Best Practices in 2017.

We are going to present a summary of each stage of TRADE benchmarking used by Dubai Municipality.

a. Terms of reference stage:

This was the first stage of TRADE benchmarking model used by Dubai municipality's benchmarking team. At this stage, numerous awareness and orientation meetings were held to identify the aim, scope, and requirements of the project along with the selection of the most appropriate team members who were to pave the way for the DM procurement division towards excellence. Members were selected according to their experience, skills, and potential contribution to the project. A benchmarking code-of conduct was unanimously agreed to, and signed by all parties involved. One of the crucial exercises carried out in this stage was to identify all stakeholders likely to be affected by the reforms the procurement and purchasing division.

The aim of the project was "To identify and implement best practices in purchasing in order to increase the percentage of purchase requisitions processed within the target of 20 days from 74% to 85% by increasing bids awarded within a target of 11 days from 45% to 52%".

b. Review stage:

In order to understand the current state, Dubai Municipality's benchmarking team conducted an in-depth study of their current procurement system and performance using analysis tools such as workload analysis, value stream analysis, influence-interest matrix, customer segmentation, fishbone diagram, process flowchart analysis and waste analysis. Data collected and analyzed from its internal key performance indicator (KPI) reports in 2015 indicated that the number of yearly purchase requisitions have exceeded 2000 representing approximately 7709 lines (items/commodities) purchased with a value of 231,000,000 AED performed by 10 purchasing officers. This analysis showed that 74% of purchase requisitions were processed within the purchase cycle time target of 20 days while 45% of bids awarded were processed within a target of 11 days.

The team prioritized what to be improved was the calculation in cost and time of each purchase

stage (Receiving Purchase Requisition, Submitting and Closing Purchase Requisition, Closing until Approval and Approval until Issuing Purchasing Order). Also among number of areas for improvement that were identified included the elimination of non-value adding processes (37% were non-value adding), ensuring correctly detailed technical specifications, and automation of these processes.

c. Acquire stage:

Before setting out to identify best practices, the benchmarking team designed a short questionnaire to understand potential benchmarking partners (e.g. size, sector, and technologies used) and ultimately select the most suitable partners to visit. Site visits were carried out to three organizations – Dubai Statistics, Dubai Health Authority, and Emirates Global Aluminium. The benchmarking team also identified best practices at Dubai Civil Aviation through a telephone call meeting. Further benchmarking was carried out by internet research of the following organizations - KPI Library, Chartered Institute of Procurement and Supply (CIPS), American Productivity and Quality Center (APQC) and Dow Chemical.

Based on the activities carried out during this stage of the TRADE methodology, Dubai Municipality's benchmarking team identified 57 ideas which were then classified into 13 categories. Further analysis and consolidation of these ideas resulted in 10 improvement ideas of which 5 were suitable and applicable for implementation.

d. Deploy stage:

Five improvement ideas were approved and implemented, these were:

- Eliminating waste in the purchasing process through reengineering or removing non-value adding activities
- Automating and improving how supplier information is obtained and used through the Request for Further Information (RFI) process.
- Introducing separate technical and commercial evaluations for requisitions above 1 million AED to ensure that only when the technical requirements are met will a bid be assessed on a commercial basis (to improve the efficiency and accuracy of the awarding process).
- Applying a service level agreement between the service provider (purchasing) and the service user (business units).
- Contracting with suppliers for long periods (3 to 5 years).

e. Evaluate stage:

The benchmarking team revisited and measured several KPIs in order to evaluate the impacts of the improvements made to the process. These showed significant improvements including the completion of 97% purchase requisitions within 12.2 days (previously 74% completion within 15.5 days) and 76% of purchase requisitions completed in bid evaluation stage within 7.7 days (previously 45% completion within 11 days). The performance achieved for these activities were better than the targets set at the start of the project.

Evaluation of success also indicated that the number of cancelled purchase requisitions reduced from 848 to 248 while the number of retendered purchase requisitions was reduced from 630 to 407. The team also found that the amount of time that buyers needed for their daily purchase cycle activities reduced from 309 minutes to 278 minutes resulting in increased productivity.

Finally, the waste elimination activities resulted in reduction of sheets of printed paper used from 20,219 to zero while automation of the Dashboard assignment for purchase evaluation resulted in the complete elimination of 1937 dashboard assignments. In total, the implementation of these activities is expected to result in annual financial savings of more than 2,000,000 AED (600,000 $) (Dubai Government Excellence Program, 2017).

4. Discussion

From the two shown case studies, it turned out that application of benchmarking led to enhance the performance of the two entities. For the first case study which was the mechanical department of Dubai police that applied TRADE benchmarking model in order to improve vehicle availability and labor productivity of the Dubai Police Mechanical Department to world-class levels. The key step of the first stage was to define a clear objective to make easier for benchmarking team to know what must be achieved and done by the end of the project - the objective was to increase vehicle availability and labor productivity from 88% to 95% and from 40% to 70% respectively. Thereafter, the team analyzed the actual performance of the Dubai Police Mechanical Department by using various analytical tools such as SWOT analysis that helped Dubai Police to identify the internal factors (strengths and weaknesses) and external factors (opportunities and threats) that are favorable and unfavorable to achieve the objective of the project. Fishbone diagram -as shown in appendices- also used in order to break down root causes that contributed to low vehicle availability which grouped into four major categories as follows: management software; spare parts; equipment and materials, and manpower. The remarkable thing about benchmarking partners chosen by Dubai police is that there were partners operating in same industry such as Kia and Arabian Gulf Mechanical Centre that would helped the team to get a practical ideas for improvement, and other partner that had a direct relation to the field of mechanics as the higher college of technology that enabled the team to know the latest researches in that field and gained a wide perspective of the issues involved. By the end of the projects, the results showed an increase in labor productivity (72.2%) even more than the target (70%) that contributed to a saving of 5,120,367 AED and the increase in vehicle availability led to extra savings of 8,680,000 AED. This in turn means that benchmarking project of Dubai police was successful despite many challenges that faced the team during their journey according to their final benchmarking report. Also, many lessons learnt by the team during undertook benchmarking project for instance: TRADE benchmarking model is a very practical, systematic and use friendly tool that can be easily applied in any benchmarking project; TRADE benchmarking has enabled a mind-set and culture of continuous improvement and change management to be developed; it was crucial for project's success to receive a strong support from leaders and commitment of team members; it was very important to carefully select the benchmarking project team members and it turned out that teamwork and sharing ideas proved to be the best approach for successful project; and stakeholders involvement also was one of important key success factors for benchmarking project.

The second case study was Dubai municipality that adopted the same model with the objective of looking for the best practices to increase the percentage of purchase requisitions processed within the target of 20 days from 74% to 85% by increasing bids awarded within a target of 11 days from 45% to 52%". As the same model was applied by Dubai municipality's benchmarking team, the same stages and steps were taken. But the remarkable thing in the second case study was that the most benchmarking partners were outside the industry such as Dubai Civil Aviation and Emirates Global Aluminium unlike Dubai police's benchmarking partners that probably gave them new innovative ideas for improvement. The Dubai Municipality's benchmarking project also witnessed a success as the result showed. The benchmarking team analyzed the performance again after the completion of benchmarking project which these showed significant improvements including the completion of 97% purchase requisitions within 12.2 days (previously 74% completion within 15.5 days) and 76% of purchase requisitions completed in bid evaluation stage within 7.7 days

(previously 45% completion within 11 days). The results also indicated that the number of cancelled purchase requisitions reduced from 848 to 248 while the number of retendered purchase requisitions was reduced from 630 to 407. The team also found that the amount of time that buyers needed for their daily purchase cycle activities reduced from 309 minutes to 278 minutes resulting in increased productivity. The remarkable thing in the second case study was that the most benchmarking partners were outside the industry such as Dubai Civil Aviation and Emirates Global Aluminium.
The Dubai Municipality's benchmarking team faced different challenges mainly resistance to change from key stakeholders, for that it was necessary more reassurance for all stakeholders embarking on the proposed changes at the procurement department; another challenge was the competence of buyers as they had a lack in technical knowledge in procurement systems and processes, for that it was necessary to enhance their supply chain management skills; also another challenging area was the technical support and maintenance that were necessary during all stages of the project.

5. Conclusion:

This paper focused mainly on determination of the relationship between public sector organizations' performance and application of benchmarking, the results based on the case studies show that application of benchmarking contributes in the improvement of government entities' performance. Also, we have reached other several conclusions depending on what previously has been shown which are listed below.

- ✓ Public sector organizations mostly adopt benchmarking as a management tool to improve performance by searching for the best practices around the world either in the same or outside industry and apply them;
- ✓ Benchmarking has been proven as an effective way to improve performance of public sector organizations just like in the private sector organizations;
- ✓ There are many various benchmarking models to be adopted that have different stages and steps, but still their aim is the same which is the improvement of performance;
- ✓ Application of TRADE benchmarking leads to cut costs, save time and deliver high quality services to citizens;
- ✓ During the application of benchmarking, it might be a need to use other managerial and analytical tools such as SWOT analysis and fishbone diagram for better understanding the actual performance and generate new ideas to improve the current performance;
- ✓ The support of top management is crucial for the success of benchmarking application;
- ✓ It is very important to carefully select team members of benchmarking project as they play crucial role in the success or failure of the project, also it is necessary to them to receive the needed training for benchmarking application;
- ✓ The involvement of stakeholders in benchmarking projects play very important role in the success of benchmarking project as they have influence on the project and also they can be impacted by the application of project.

As general conclusion, public sector organizations can enhance performance without additional spending or even with lower public spending through application of benchmarking. Then, it is very important for mangers of public sector organizations to change their mind-set and be open-minded to adopt new philosophy, methods and ways in management of governmental organizations as benchmarking in order to improve the performance.

6. Bibliography List

Attiany, M. S. (2014). Competitive Advantage Through Benchmarking: Field Study of Industrial Companies Listed in Amman Stock Exchange. *Journal of Business Studies Quarterly, 5*(4), pp. 41-51.

Babović, J., Raičević, V., & Carić, M. (2012). Benchmarking as Function of Competitiveness and Efficiency in Business. *Economics of Agriculture, 59*(1), pp. 115-127.

Dragolea, L., & Cotîrlea, D. (2009). Benchmarking: a valid strategy for the Long Term? *Annales Universitatis Apulensis Series Oeconomica, 11*(2), pp. 813-826.

Elmuti, D., & Kathawala, Y. (1997). An overview of benchmarking process: a tool for continuous improvement and competitive advantage. *Benchmarking for Quality Management & Technology, 4*(4), pp. 229-243.

Francis, G., & Holloway, J. (2007). What have we learned? Themes from the literature on best practice benchmarking. *International Journal of Management Reviews, 9*(3), pp. 171-189. doi:10.1111/j.1468-2370.2007.00204.x

Fong, s. w., Cheng, e. w., & Ho, d. c. (1998). Benchmarking: a general reading for management Practitioners. *Management Decision, 36*(6), pp. 407-418.

Goncharuk, A. g., Lazareva, N. o., & Alsharf, I. a. (2015). Benchmarking as Performance Management Method. *Polish Journal of Management Studies, 11*(2), pp. 27-36.

Kozak, M., & Nield, K. (2001). An Overview of Benchmarking Literature: Its Strengths and Weaknesses. *Journal of Quality Assurance in Hospitality & Tourism, 2*(3/4), pp. 7-23. doi:10.1300/J162v02n03_02

Krishnamoorthy, B., & Dlima, C. (2014). Benchmarking as a measure of competitiveness. *International Journal of Process Management and Benchmarking, 4*(3), pp. 342-359. doi:10.1504/IJPMB.2014.063240

Kyro, P. (2003). Revising the concept and forms of benchmarking, *Benchmarking: An International Journal, 10*(3), pp. 210-225. doi:10.1108/14635770310477753

Marković, L., Dutina, V., & Kovačević, M. (2011). Application of Benchmarking Method in the Construction Companies. *FACTA UNIVERSITATIS Series: Architecture and Civil Engineering, 9*(2), pp. 301-314. doi:10.2298/FUACE1102301M

Milosevic, D., Djuric, M., Filipovic, J., & Ristic, S. (2013). Benchmarking as a Quality Management Tool in Public Administration. *Inzinerine Ekonomika-Engineering Economics, 24*(4), pp. 364-372. doi:10.5755/j01.ee.24.4.2785

Moriarty, J. P., & Smallman, C. (2009). En route to a theory of benchmarking. *Benchmarking: An International Journal, 16*(4), pp. 484-503. doi:http://dx.doi.org/10.1108/14635770910972423

Pervaiz, A. K., & Mohammed, R. (1998). Integrated Benchmarking: a Holistic Examination of Select Techniques for Benchmarking Analysis. *Benchmarking for Quality Management & Technology, 5*(3), pp. 225-242.

Seminar article

Bouvard, F., Carsouw, R., Labaye, E., Alastair, L., Mendonca, L., Remes, J., Test, S. (2011, July 8-10). Better for Less: Improving Public Sector Performance on a Tight Budget. *Paper presented at the 11th Rencontres Economiques D'Aix-en-Provence on The States of the World, Le Cercle des economists.* Aix-en-Provence, France. Retrieved from http://www.mckinsy.com/~/media/mckinesy/dotcom/client_service/public%20sector/pdfs/better_for_less_improving_public_sector_performance_ona_tight_budget_ashx

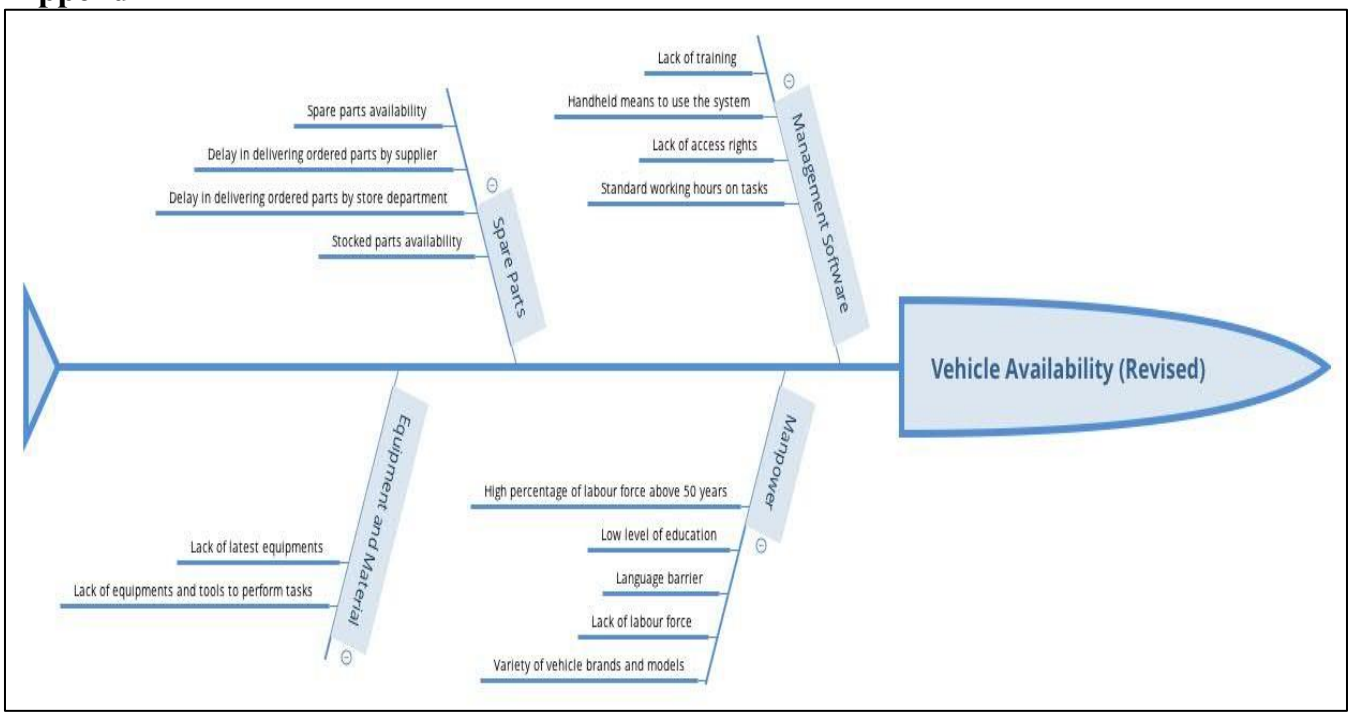
Internet websites

- www.bestpracticecompetition.com: http://www.bestpracticecompetition.com/wp-content/uploads/2017/01/TRADE-Mumbai-27-28-April2017.pdf.

(consulted on 19/11/2018).
- *blog.bpir.com.*). https://blog.bpir.com/category/dubai-we-learn/ (consulted on 20/11/2018).
- Dubai Government Excellence Program. (2017). *Achieving performance excellence through benchmarking and organizational learning -13 case studies from the 1st cycle of Dubai We Learn's Excellence Makers Program.* publishers: DGEP and COER Limited., https://blog.bpir.com/wp-content/uploads/2018/01/Dubai-We-Learn-13-Benchmarking-Case-Studies.pdf. (consulted on 20/11/2018).

6. Appendices

Appendix 1



Appendix 2