Application of Key Performance Indicators (KPIs) in the UAE Public Libraries An Analytical Study

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Abstract

The main purpose of the study was to identify the current application and use of key performance indicators (KPIs) in measuring library services in the United Arab Emirates (UAE) public libraries. The study seeks to determine the importance of measuring the performance of library services in terms of:
1. methods of data collection,
2. resources spent,
3. current KPI methods employed,
4. use of information resulting from KPI measurement,
5. the types of participants involved in the KPI measurement process.

The population of the study was the federal and local governmental public libraries in the United Arab Emirates (UAE). The population of the study included Dubai Public Library, Sharjah Public Library, Abu Dhabi National Library and Ministry of Culture and Community Development Public Libraries. Those public libraries administer the access to information and the provision of library services through thirty (30) service library branches; using (290) Full time employee (FTE) of staff, collection exceeds six (6) million items and around six hundred thousand visit FY 2012. All libraries of the population of the study provide electronic library services.

The study was conducted using a self-administered questionnaire distributed to Library Directors yielded a 100% response rate. Respondents recorded current application of KPIs practices, estimated resources expended to conduct KPIs measurement, identified KPIs measurement participants, and challenges facing them in KPIs measurement. The results of the study indicate that 80% of public libraries in the UAE are currently using and applying KPIs in measuring performance of library services, 57% of the UAE public libraries adopted ISO 11620 as a reference to their KPIs application. Finally, the study results indicated the common reasons for the application of performance indicators were to identify areas of strengths/weaknesses, to improve performance and to increase level of users’ satisfaction. Recommendations of the study include: emphasis on adopting best practices, benchmarks, automated performance management systems, ISO11620, and design and conduct of training programs for librarians.
INTRODUCTION TO THE STUDY
1.1 Background of the Study

Based on the golden rule in performance management by Tom DeMarco (1982)\(^1\) who stated that, “You can’t control what you can’t measure”, and on what other resources cited that, the outstanding figure, thinker, and management consultant Peter Drucker who said “you can’t manage what you can’t measure” Loosley (2007)\(^2\). Drucker (2001)\(^3\) summed up the importance of measurements by,

“To be able to control his own performance, a manager needs to know more than what his goals are. He must be able to measure his performance and results against the goal. It should indeed be an invariable practice to supply managers with clear and common measurements in all key areas of a business. Those measurements need not be rigidly quantitative, nor need they be exact. But they have to be clear, simple, and rational. They have to be relevant and direct attention and efforts where they should go. They have to be reliable - at least to the point where their margin of error is acknowledged and understood. And they have to be, so to speak, self-announcing, understandable without complicated interpretation or philosophical discussion. Each manager should have the information he/she needs to measure his/her own performance and should receive it soon enough to make any changes necessary for the desired results. And this information should go to the manager himself and not to his superior. It should be the means of self-control, not a tool of control from above. It’s a big headache to library managers and directors to put their hands on areas of weaknesses at their libraries. Librarians used to use the traditional ways for evaluating library services and activities. However, the vast development in information technology and advancement in communication tools leaded to dramatic changes of information access and services. Most of libraries and their parent organizations are looking for service quality. To be accountable for that, Stewart (2007)\(^4\) mentioned types and levels of measures to be involved in development for that, which are:

- **Input measures**, including both; a) Resources input; that is, budget, staff, facilities, materials, and equipment. b) Activities input; that is, programs, developed to fulfill identified goals.
- **Output measures**: the various products of program activities, measured by accomplishments (counted in numbers: number of books, number of reference questions answered, etc.)
- **Outcomes assessments**: the benefits or changes for individuals or populations during or after participating in activities. They relate to inputs to identify and establish best practices for future services.

Van House (1989)\(^5\) pointed out that performance measures was a key phrase in 1970s which replaced by the output measures in the 1980s. In late 1990s a new generation of performance indicators was published by the International Standardization Organization (ISO) throughout ISO 11620. First edition of ISO 11620 was issued in 1998 and its technical report ISO/TR 20983 about electronic library services indicators was issued in 2003. ISO 11620 amendments was issued in 2003. Both, the standard and the technical report, were revised and issued together in the 2nd edition of ISO 11620 in mid-August 2008.

ISO 11620\(^6\) stated clearly that “As a library planning and evaluation tool, performance indicators have two principal objectives. One is to facilitate control in the management process; the other is to serve as a basis for reference and for dialogues between library staff, funding bodies and the user community.

A secondary objective is to serve in comparative analysis of the performance of libraries and information services which have equivalent missions or objectives”.

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1. DeMarco, T (1982), p3
As per Poll & Boekhorst (2007)\textsuperscript{7}, planning for quality requires tools to assess the library whether achieved its objectives or not. At the same time, it became a public call to apply concepts of transparency, accountability, and quality assurance in non-profit organizations. Funders of libraries also become generally need to know the value of money paid not only by questioning for data, inputs, and outputs but also for evidences of efficiency, cost-effectiveness, and service delivery to the extent that quality assessment has become a political weapon to request resources and protection for the library in the organization as Brophy and Coulling (1996)\textsuperscript{8} stated. 

Poll & Boekhorst (2007)\textsuperscript{9} mentioned also that the first step for a library is to choose a set of performance indicators that corresponds to its mission and goals. The indicators should also refer to the mission and goals of the library’s parent institution and show the library’s support for the institution’s goals.

The concept of quality may be different for each library, and measures should be selected according to that concept. In addition, the library’s mission and goals may be changed over time. Connaway and Powell (2010)\textsuperscript{10} stated that performance measurement is another specific type of evaluative research. Performance measures focus on indicators of library output and effectiveness. They are clearly related to the impact of the library on the community. Lately, LIS profession has been concerned with using performance measures to evaluate electronic resources and services, including networked services.

Based on Gdoura (2002)\textsuperscript{11}, application of KPIs and performance measurement does not seem to be either a priority or an essential component of the library organization and its culture in the Arab country libraries. He recommends giving this important issue of the library administration more attention by which the librarians can report the past and planning for the future.

\textbf{1.1.1 Performance Indicators}

International standard ISO 11620 (2008) has defined performance indicator as »an expression (which may be numeric, symbolic or verbal) used to characterize activities (events, objects, persons) both in quantitative and qualitative terms in order to assess the value of the activities characterized, and the associated method\textsuperscript{12}'.

ISO 11620 (2008) pointed out the purpose of library performance indicators is to function as tools to assess the quality and effectiveness of services, resources, and other activities provided by a library, and to assess the efficiency of resources allocated by the library to such services and other activities.

The following criteria should be used to test a performance indicator as they stated in ISO 11620 2008\textsuperscript{13}:

1. Informative content: The performance indicator has to be informative as a tool for measuring an activity, for identifying achievements, and for identifying problems and shortcomings in the performance of the library so that action can be taken to remedy these. It should provide information for decision-making, e.g. for setting goals, budget allocation, prioritizing services and activities.

2. Reliability: A performance indicator has to be reliable in the sense that it consistently produces the same result when used repeatedly under the same circumstances. NOTE the fact that a performance indicator reflects the underlying variability of the data, such as seasonal variations or a fluctuation in loan activities does not in itself mean that the performance indicator is not reliable.
3. Validity: The performance indicator shall be valid in that it shall measure what it is intended to measure. NOTE the fact that some performance indicators are indirect performance indicators or rough estimates doesn’t in itself mean that they are not valid.

4. Appropriateness: The performance indicator shall be appropriate for its intended purpose. That is, the units and scale shall be suitable, and the operations necessary to implement the process of measurement should be compatible with the library’s procedures, physical layout, etc.

5. Practicality: The performance indicator has to be practical in the sense that it uses data that the library can produce with a reasonable amount of effort in terms of staff time, staff qualifications, operational costs and users’ time and patience. If the performance indicator is intended for comparisons between libraries, a sixth criterion applies.

6. Comparability: A library performance indicator allows comparisons between libraries if the same score, making allowance for the accuracy of the score, means the same level of quality of services or the same level of efficiency in the libraries to be compared. NOTE 1 it is vital to ensure that the activities being measured are comparable. NOTE 2 This criterion is sufficient for ranking libraries according to the score of the performance indicator, but is not sufficient to determine, for example, that a library with twice the score of another is twice as good.

As for how to assess performance indicators, Abu Eid and AlEraidi (2008) pointed out criteria of assessment for performance indicators based on quality auditing systems:

1. Scope: performance indicators should cover different areas and the scope of work and thus are relying on the principle of Balanced Scorecard to include in addition to the perspective of financial performance, library users, learning and growth, as well as the perspective of operations processes.

2. Targets: targets to be achieved shall be challenged and based on benchmarking or historic data at the beginnings.

3. Segmentation: each indicator shall be divided to several different levels in order to reach the exact result performance.

4. Trend: identification direction of the indicator whether going up or going down or steady.

5. Causality: justification and explanation of results for each indicator followed by either supportive action in the case of positive trend or corrective action in the case of negative trend.

6. Measurement tools: mechanism of collection and measurement of data which needed to calculate the indicator’s formula. Automated is preferable.

1.1.2 ISO 11620:2008

The main purpose of the International Standard ISO 11620: 2008 is to endorse the use of performance indicators in libraries and to spread knowledge about how to conduct performance measurement. The second edition of ISO 11620 cancels and replaces the first edition (ISO 11620:1998), its Amendment 1(ISO 11620:1998/Amd.1:2003) and ISO/TR 20983:2003, which have been technically revised. The revision incorporates performance indicators for electronic and traditional library services and resources into a single document, and includes technical updates to performance indicators of electronic and traditional library services and resources. By the establishment of this International Standard, the use of performance indicators can be advanced and libraries in developing and developed countries will benefit from the knowledge and skills associated with formal planning procedures and data collection processes.

14 Abu Eid and AlEraidi (2008), p9
The 2nd edition published on 15th August 2008 as stated at ISO web site. This standard consists of 86 pages. It was developed by ISO technical committee ISO/TC 46, Information and documentation, subcommittee SC 8. Quality – Statistics and performance evaluation.

1st edition was published in 1998 then its amendment published in 2003 specifies the requirements of a performance indicator for libraries and establishes a set of performance indicators to be used by libraries of all types. It also provides guidance on how to implement performance indicators in libraries where such performance indicators are not already in use.

In relation to strong points of this standard, Bellini (2004) declares that there are three main reasons for the preference of ISO 11620 standard:

1. ISO is a highly authoritative body and is internationally well known even outside the library sector. Consequently, the results yielded by an ISO standard enjoy more acceptance outside the restricted domain of the library.
2. ISO 11620 offers greater guarantees as regards development and updating.
3. The ISO standard comprises a larger number of indicators.

Indicators may be used for comparison over time for the services provided by the same library. Comparisons between libraries and services should only be made with caution, taking into account differences in the constituencies of the libraries, with good understanding of the indicators used, and careful interpretation of the data.

White (2002) summed up that the literature of librarianship suggests that there is little consensus regarding the purposes and definitions of performance measurements in public libraries. Further, the literature suggests there is little consensus as to what types of performance measurements methodologies should be used in public libraries or what benefits are derived from using these performance measurements methodologies. However, the literature does demonstrate a consensus that public libraries have been using performance measurements to report some form of efficiency and accountability information to stakeholders for many years.

1.2 Statement of the Problem
This study attempts to fill the gap in the research by conducting an analytical study to assess the application of KPIs in measuring performance of library services in public libraries, specifically in the UAE public libraries.

This study emphasizes the importance of measuring the performance of electronic library services. KPIs are very important tools in the hand of library managers by which they can measure strengths and/or weaknesses in providing electronic library services. The use of KPIs will provide answers to what extent the library management is efficient and effective in planning and delivering electronic library services to its community of users.

1.3 Research questions
The primary questions guiding the study are:
1. Do public libraries using KPIs to measure performance of library services?
2. What are attitudes towards adopting ISO 11620 as a model for KPIs?
3. What are the difficulties facing library administration in measuring library services?
4. Are the used KPIs for evaluating electronic library services relevant to the international standards?

1.4 Purposes of the Study
The purposes of this study are to:
1. Assess the application and usage of key performance indicators in measuring library services in the UAE public libraries.

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15 http://www.iso.org/iso/catalogue_detail.htm?csnumber=37853
16 Bellini (2004), p48-57
17 White (2002), p 40
2. Identify what kind of performance indicators measures being used by public libraries in evaluating library services
3. Determine difficulties facing public libraries in using of the key performance indicators in measuring the performance of library services provided
4. Investigate the attitudes of public libraries towards using and adopting ISO 11620 library performance indicators as a standard model for measuring and evaluating of library services.

This study is not related to measure the performance of the public libraries services or sources. But, it examines the application and use of KPIs in library services. The study diagnoses difficulties facing public libraries in using KPIs to measure library services. The study proposes to use ISO 11620: 2008 library performance indicators as a model to be used from the population of the study.

1.5 Importance of the Study
This study attempted to gain an understanding of the application and usage of KPIs in public libraries environment and to fill the gap in the research and literature. This understanding can serve as a resource and guide for other libraries to develop effective and efficient planning practices and tools based on using of proper KPIs. In fulfilling the study’s purpose, the results of the study allowed the researchers to:

- Identify the current KPIs measurement employed in the UAE public libraries.
- Identify library administrators’ perceptions of KPIs measurement on the library services.
- Provide data and information to librarians, researchers, and educators for developing professional education on KPIs management and performance measurement training programs to improve the UAE public library administrators’ understanding of KPIs.
- Determine the present situation and condition of the culture of KPIs assessment of the library services in the UAE public libraries.
- Establish baseline data for future research directions in KPIs, performance measurement and library administration in the UAE public libraries.

1.6 Scope of the Study
The scope of the study is limited to the library services of the UAE federal and local governmental public libraries.

2. REVIEW OF THE LITERATURE
This part presents the research and literature of scholars in library performance measures and related fields. The researchers categorized the literature review into KPIs applications and libraries performance assessment measures.

A paper by Abu Eid and AlEraidi (2008) titled “Dubai Public Library KPIs between organizational measurement and professional standards”. The paper describes one of the important experiences in the Arabian Gulf region in application of quality management in public libraries. KPIs were created to measure library performance according to requirements and methodologies for measuring performance in Dubai Municipality organizational units, then a set of appropriate KPIs were developed according to professional standards depending on ISO 11620. The principles of Dubai Government Excellence Program were adopted in application of KPIs in terms of scope, segmentation, measurement tools and frequency, targets, causality and trend. The paper emphasized on the importance of application of KPIs on increasing level of users satisfaction and improving library performance.


Institutions (IFLA). Publication number 127, 269 pages. The first edition of this handbook appeared in 1996 and dealt with academic libraries. It gained wide acceptance and was translated into five other languages. After ten years the new edition widens the perspective to public libraries and adds indicators for electronic services and cost-effectiveness. The handbook has been considerably enlarged, from 17 to 40 indicators. It gives practical help by showing examples of possible results for each indicator. The handbook is intended as practical instrument for the evaluation of library services. Although it aims specifically at academic and public libraries, most indicators will also apply to all other types of libraries. The book discusses the role of performance indicators in quality management, indicators impact or outcome, overview the indicators, description of the indicators, and list of indicators which categorized into; a) resources and infrastructure b) use c) efficiency d) potentials and development. This edition offers seven indicators especially intended for electronic services; a great part of the other indicators combine the quality assessment of both traditional and electronic services. The book ends up with 2 annexes, selected bibliography, and index to indicators.

A study was conducted based on highly acceptable service quality models LIBQUAL and service standards. Kyrillidou and Persson (2006) implemented LibQUAL in Lund University, Sweden. They examined aspect of “how the information control dimension is depicted in the results of the Swedish participants”. Based on findings, Swedish users have indicated that the information control dimension is an important one to them.

The five most desired items overall are:

1. Making electronic resources accessible from users’ home or office.
2. Easy-to-use access tools that allow users to find things on their own.
3. A library web site enabling users to locate information on their own.
4. Making information easily accessible for independent use.
5. Print and/or electronic journal collections.

Findings clearly indicate that from 372 LibQUAL comments analyzed, the users urge the ability of independent use of the library resources and they show the importance of self-sufficiency; what is self-evident in the statement “making electronic resources accessible from users’ home or office”.

Another survey is the trial application of the ISO 11620: library performance indicators at the library of the University of Trento, Italy conducted in 2004 by Bellini, Paulo—chief librarian of the University of Trento Library, Trento, Italy. He concluded that the implementation of standard ISO 11620 is difficult and time-consuming, requiring commitment to overcome resistance from within and outside the library. But, the performance measurement has proven to be a useful and versatile tool for university management. He pointed out that implementation of the ISO 11620 standard is onerous and extremely time-consuming. It also requires determination to overcome opposition and resistance from within and from outside the library. The librarians themselves are rarely conscious of its necessity and its benefits. On the other hand, the performance measurement has proved to be a very useful and versatile tool from the viewpoint of the university management.

A PhD dissertation by White (2002) purposes were to identify the use and perceived impact of performance measurement (PM) in Florida public libraries and to determine whether a culture of assessment exists in Florida public libraries. The study seeks to determine the perceived impacts of PM, methods of data collection, resources expended to conduct PM, current PM methods employed by Library Administrative Units (LAU), use of information resulting from PM,

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21 White, L. N. (2002), 448p
and the types of participants involved in the PM process. The survey was conducted using an evaluative mixed-methodology research design. The study participants were the head public library administrators of Florida’s seventy-five (75) public LAU. The study was conducted in two phases: Phase I of the study was a self-administered attitudinal-quantitative survey of the seventy-five Head Library Administrators (HLA) conducted by e-mail which yielded a 53.3% return rate. Respondents recorded current performance measurement practices, estimated resources expended to conduct PM, identified PM process participants, and perceptions of the impact and effectiveness of PM. Phase II of the study consisted of a qualitative series of interviews conducted by e-mail and telephone with Key Informants (KI). KIs within and outside of the HLA population were interviewed to gather additional information on the history, current practices, and the future needs and developmental directions of PM in Florida’s public libraries. The results of the study indicated that a wide variety of PM methods used in Florida public libraries with HLA perceiving marginal impact resulting from their use in their LAU. Study results indicated a culture of assessment did not exist in Florida public LAU. The study also concluded that Florida public LAU expended an estimated $7.9-$16.1 million and used an estimated 335-609 staff FTE (not including training time) to conduct PM in FY 2000-2001. Finally, the study results indicated the PM process in Florida LAU created Orphaned Data and Knowledge (ODK). Recommendations of the study include: future research to determine how ODK is created and how ODK can be transformed into a beneficial resource, improving HLA’s use and understanding of the PM process.

A study by Poll (2001)22 for performance measures for library networked services and resources. The study described the problems of data collection in measuring performance of electronic resources services, and gave definitions for the electronic collection and the different steps of using electronic services. She concluded that libraries should continue to use performance indicators and compare results and methods so that a general consensus on validated indicators can be reached. Furthermore, it is important to contact the suppliers of information and the vendors of library systems and get them to deliver the data that libraries need in order reduce time-consuming data collection. Libraries put much effort into the development of their electronic services. They must be able to show whether they are developing in the right direction, whether the services they offer are accepted by their clientele, and whether they are offered in a cost-effective way.

A PhD dissertation by Reza (2009)23, assessed the performance of libraries at the Islamic Azad University, Sciences and Research Branch (IAUSRB). The researcher developed a questionnaire based on available standards and quality assessment tools including ACRL standards, LibQUAL and ISO 11620, and some criteria included in the related literature was designed and distributed among users of IAUSRB libraries. Five service quality categories were included in the questionnaire: “Environment, equipment and physical facilities”, “Public services”, “Non-book materials”, “Staff (librarians and their co-workers)”, and “Information literacy and user education”. Based on research findings, the most expected library services prioritized by users are “operation time”, “staff”, and “circulation”, while the least expected library services which are of lower importance from users’ perspective are “press” and “audiovisual materials”. The findings also indicated that services offered by the libraries surveyed had a relatively quality performance and average success (perceived quality is 2.9635±50%). In other words, such a finding emphasizes an average performance of IAUSRB libraries. In addition, confirming five research hypotheses concerning gap analysis, there was a significant difference between expected quality of five service categories and their perceived quality based on users’ viewpoint. It was also realized that the categories with better performance or perceived quality from users’ perspective are “staff”, “information literacy and user education”, and “environment, equipment and physical facilities”, and the two libraries “Theology and Philosophy” and “Medical Engineering” have offered poor services than the other IAUSRB libraries.

23Reza, Ali (2009), p51-81
A Master dissertation field study by Younis (2007) on evaluation of the Helwan University libraries performance, Egypt. The researcher investigated the objectives, scope, tools, indicators, methods, and outcomes of performance measures. The researcher presented indicators for assessing performance in libraries. The researcher found out that the main difficulties facing university libraries in measuring performance are; fear, difficulties in measuring objectives, the nature of university libraries as governmental institutions, absence of control of the public ownership, political pressure, measurement misleading, and the predominance of routine in government work. Then researcher concluded by proposing how to overcome these difficulties.

A survey by Woo (2004) evaluated the performance of the main library of University of Hong Kong and its six branch libraries; identifies any performance gaps, and finds out user preferences for print and electronic materials.

The questionnaire included five categories:

1. service quality
2. facilities, equipment, and physical environment
3. resources
4. electronic resources
5. new services implemented by University of Hong Kong libraries since 2001.

The results showed that 68.8 percent of the respondents prefer to use online journals, compared to 31.2 percent who prefer to use print journals, and 71.8 percent of the respondents prefer to use printed books compared to 28.2 percent who prefer to use electronic books.

The body of knowledge derived from the research and literature of these scholars on library performance measures formed the underlying theoretical framework for this study. It also served to inform the researcher about the performance indicators in general and ISO 11620 in particular.

This study is different from previous studies in that it examines the application and usage of KPIs in electronic library services not measuring the performance of library services. This study diagnoses difficulties facing public libraries in using KPIs to measure electronic library services. The study proposes and recommends using ISO 11620: 2008 library performance indicators as a model to be used by public libraries.

3. METHODOLOGY
3.1 Design of the Investigation

The researchers used the questionnaire as a technique in order to reach the projected study population. The researchers designed the questionnaire of the study to be used as a self-administered questionnaire. The questionnaire was designed using both closed-ended and open-ended questions.

Creswell (2008) suggests that closed questions are best used when determining the degree of participation or involvement, intensity of feelings, or frequency of events. The questionnaire consisted of three parts. The first part included ten questions of closed and open-ended questions to gather information about the population of the study, the second part of the questionnaire was Fifteen questions, two of them were open-ended, to understand the current applications of KPIs, the third group of questionnaire was six questions about the ISO 11620: library performance indicators. Four questions were to identify reasons of why not using KPIs, and the questionnaire ended up with open question as a general comment.

According to Creswell (2007) the validity is the accuracy and credibility of the accounts or reports of the phenomenon from the participants’ perspective and the inferences made made.
by the researcher; the degree to which the results of the research can be generalized to other context or settings; and the theory or terms used to refer to the research phenomenon. Validity and reliability of the questionnaire has been tested by five experts in the field of library and information science. The feedback from experts was taken in consideration. Furthermore, a pilot study was conducted to pretest the questionnaire. It was distributed to a set of library professionals and the results showed that the pretest did not turn up any problem. The survey was designed, distributed and collected electronically using MonkeySurvey.com. The reason for that was to promote the ease of returning the survey instrument for participants as conducting the survey electronically minimized the time and resources required for distribution, completion and analyzing data. A unified e-mail message was sent to Library Directors of the UAE public libraries. The message included objectives and purpose of the study. A link to the Web questionnaire was provided in the body of the message.

3.2 The Population of the Study

Connaway and Powell (2010) pointed out that qualitative research tends to apply a more holistic and natural approach to the resolution of a problem than does quantitative research. It also tends to give more attention to the subjective aspects of human experience and behavior. Small samples are often acceptable in qualitative studies.

The population of the study is the UAE federal and local governmental public libraries. The population of the study consisted of thirty libraries covers the seven Emirates of the UAE. Abu Dhabi Emirate represented by Tourism and Culture Authority-National Library (ADNL), Dubai Emirate represented by Dubai Public Library (DPL), Sharjah Emirate represented by Sharjah Public Library (SPL), and Ras AlKhaima, Ajman, Fujairah, and Umm AlQuawain were represented by Ministry of Culture, Youth and Community Development Libraries (MCYCDL).

4. RESULTS AND DISCUSSION

The study was conducted using SurveyMonkey.com and sent to Library Directors yielded a 100% response rate. General information was gathered about the population of the study. Respondents recorded current application of KPIs practices, estimated resources expended to conduct KPIs measurement, identified KPIs measurement participants, and challenges facing them in KPIs measurement.

The first set of questions used to collect information about the population of the study in terms of services provided, collection size, number of employees, annual budget allocated for collection, number of library members and visitors and level of satisfaction of library users. The results indicate that all population of the study provide traditional public library services; lending, reference service, reading, searching library materials, training on library services, guidance to library services, and support services such as copying, printing etc. while two public libraries provided current awareness and selective dissemination of information. In addition to traditional library services, results indicate that all libraries provide electronic library services in form of Web site, Internet access to community of users, electronic reference service, OPAC, Wi-Fi service, electronic document delivery service and training of users on electronic resources.

The results were that those public libraries administer the access to information and provision of the library services through thirty branches using two hundred ninety Full Time Employees (FTE) of staff, the total annual budget for collection of the responded population of the study exceeds AED 3.7 million with annual average expenditure AED 1.2 million per responded library, around six hundred thousand visit FY 2012 while the number of members eligible for borrowing exceeds (57) thousand members for the whole population of the study, and two of the libraries provided the percentage of satisfaction of its users. Table 4.1 illustrates general information about population of the study.

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Connaway and Powell (2010), p. 77
Table 4.1 Information about population of the study

<table>
<thead>
<tr>
<th>Library</th>
<th>No. of library branches</th>
<th>Collection Size (Number of volumes)</th>
<th>Number of Staff (Full Time Employees)</th>
<th>Annual budget for collection AED</th>
<th>No. of Visits (FY 2012)</th>
<th>No. of library members</th>
<th>Level of customer satisfaction FY 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCYCDL</td>
<td>9</td>
<td>340000</td>
<td>35</td>
<td>1,000000</td>
<td>335000</td>
<td>35000</td>
<td>85%</td>
</tr>
<tr>
<td>ADNL</td>
<td>6</td>
<td>5,000,000</td>
<td>120</td>
<td>NA</td>
<td>117761</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>DPL</td>
<td>8</td>
<td>462355</td>
<td>91</td>
<td>1,830000</td>
<td>318240</td>
<td>16819</td>
<td>77%</td>
</tr>
<tr>
<td>SPL</td>
<td>7</td>
<td>383992</td>
<td>44</td>
<td>900000</td>
<td>25621</td>
<td>5302</td>
<td>NA</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>6,186,347</td>
<td>290</td>
<td>3,730000</td>
<td>596622</td>
<td>57121</td>
<td>Avg. 81%</td>
</tr>
</tbody>
</table>

The second part of questions was to assess level of application and usage of ISO 11620 KPIs, reasons led to apply ISO11620, when they started application, difficulties facing application of ISO11620, perception perceived with ISO11620 and advantages and disadvantages of the ISO 11620 KPIs application.

The results indicate that 24 libraries out of 30 libraries representing 80% of the responded population of the study applied KPIs in general, 17 libraries out of 30 libraries representing 57% of the responded population of the study applied ISO11620, while 6 libraries representing 20% did not apply KPIs. Table 4.2 illustrates libraries applied KPIs and ISO 11620.

Table 4.2 Libraries applied KPIs and ISO 11620

<table>
<thead>
<tr>
<th>Application of KPIs</th>
<th>Counts (30)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libraries applied KPIs in general</td>
<td>24</td>
<td>80%</td>
</tr>
<tr>
<td>Libraries applied ISO 11620</td>
<td>17</td>
<td>57%</td>
</tr>
</tbody>
</table>

The results indicate that the top ranking reasons for those libraries who applied ISO 11620 were:

- (100%) ISO is internationally well known organization
- (100%) ISO guarantees development and updating

Table 4.3 shows reasons of using of ISO 11620 and period of application.

Table 4.3 reasons of using of ISO 11620

<table>
<thead>
<tr>
<th>reasons of using of ISO 11620</th>
<th>Counts (17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internationally well-known organization</td>
<td>17</td>
<td>100%</td>
</tr>
<tr>
<td>Guarantees development and updating</td>
<td>17</td>
<td>100%</td>
</tr>
<tr>
<td>ISO is a highly authoritative</td>
<td>8</td>
<td>47%</td>
</tr>
<tr>
<td>Reputational organization</td>
<td>8</td>
<td>47%</td>
</tr>
<tr>
<td>Acceptance outside the library domain</td>
<td>8</td>
<td>47%</td>
</tr>
<tr>
<td>Contains a large number of indicators</td>
<td>8</td>
<td>47%</td>
</tr>
</tbody>
</table>

The results indicate that all libraries used ISO 11620 more than 5 years ago.

In other questions, respondents were asked to identify difficulties of using ISO11620 and satisfaction with using ISO11620. The results indicate that 8 libraries out of 17 libraries were suffering from technical difficulties. While when asking about satisfaction of using ISO11620, all of them 17 libraries reported that they were satisfied with using of ISO11620. Table 4.4 shows difficulties of using ISO11620.
Table 4.4 Difficulties using ISO11620

<table>
<thead>
<tr>
<th>Difficulties of using ISO11620</th>
<th>Counts (17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Difficulties</td>
<td>9</td>
<td>53%</td>
</tr>
<tr>
<td>Technical Difficulties</td>
<td>8</td>
<td>47%</td>
</tr>
</tbody>
</table>

To gain feedback from the respondents about what they like and dislike of the ISO1162, respondents were asked to identify the positives and negatives of using ISO11620. The results indicate that the positive points of using ISO11620 were without any preferences;
- The commitment to the international standards,
- Considered as a global reference:
- Benefit from standard measurement formulas, and
- The possibility of aligned locally.
While the negative points were:
- Little bit complex,
- Sometimes unclear, and
- Examples are not enough

The third part of questions was to gain general information about culture of performance measurement for those libraries that applied KPIs wither ISO11620 or not. The participants were twenty four libraries which provided information about of reasons for the application of performance indicators, which lead and facilitate KPIs measurement activities, frequency of reviewing KPIs measurements, resource, and challenges of application.

The results of study confirmed that the common reasons for the application of performance indicators and the top three reasons were;
- (100%) To know areas of strengths/weaknesses;
- (100%) To improve performance, and
- (100%) To increase level of users’ satisfaction.

Table 4.5 shows reasons why libraries measuring KPIs

<table>
<thead>
<tr>
<th>Reasons why measuring KPIs</th>
<th>Count (24)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Know Areas of Strengths/Weaknesses</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>To Improve Performance</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>To Meet Upper Management Instructions</td>
<td>17</td>
<td>71%</td>
</tr>
<tr>
<td>To Align with Strategic Directions</td>
<td>17</td>
<td>71%</td>
</tr>
<tr>
<td>To Increase Level of Users’ Satisfaction</td>
<td>24</td>
<td>100%</td>
</tr>
</tbody>
</table>

The results indicate that 15 libraries representing 63% of responded libraries spent an average of less than 1 day per a week, while 9 libraries representing 37% spent an average of 3-4 days per week in KPIs measurement or related activities. 63% of responded libraries representing 15 libraries who applied KPIs depend on their executives and managers to take care of KPIs measurement activities, While 9 libraries representing 37% have formally appointed and trained corporate performance management team.

The results show that each library of the responded population of the study has its own period of revision of the KPIs measurement. All of them used the mix (manual/electronic) measurement tools. 15 libraries representing 63% of responded libraries don't have automated Performance Management System (PMS), while 9 libraries representing 37% of responded libraries have an automated PMS due to availability of PMS in parent organization.

In other questions, respondents were asked “what priority libraries give to KPIs measurement?, staff perception? and benefits of using KPIs?”. The questions were designed to measure...
level of priority given to KPIs measurement, to measure opinion of library staff towards KPIs measurement and to find out the benefits gained from KPIs measurement.

The results indicate that 9 out of 24 libraries representing 37% of responded libraries considered KPIs measurement urgent and important. While 15 out of 24 libraries representing 63% of the responded population of the study considered KPIs measurement is not urgent but important. On the other hand, 8 out of 24 libraries representing 33% of responded libraries considered KPIs measurement important but not fun to do it. While 16 out of 24 libraries representing 67% of the libraries of the responded population of the study considered KPIs measurement is essential or critical to their library success.

The results indicate that 9 out of 24 libraries representing 37% of responded libraries get benefited from the using of KPIs in achieving strategic goals, 8 out of 24 libraries represented 33% of responded libraries to improve performance, and 7 of the libraries representing 29% to increase level of users’ satisfaction. Table 4.6 illustrates benefits of using KPIs.

<table>
<thead>
<tr>
<th>Benefits of using KPIs</th>
<th>Counts (24)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieved Strategic Goals</td>
<td>9</td>
<td>37%</td>
</tr>
<tr>
<td>Improved Performance</td>
<td>8</td>
<td>33%</td>
</tr>
<tr>
<td>Increased Level of User’s Satisfaction</td>
<td>7</td>
<td>29%</td>
</tr>
</tbody>
</table>

Finally, respondents were asked to identify the BIGGEST CHALLENGES of KPIs measurement. The question was designed to find out the top challenges of the KPIs measurement they want to overcome. The results indicate that the top ranking of challenges of KPIs measurement were:

- (100%) Staff not understanding why KPIs measurement matters
- (100%) Reaching KPIs targets

Table 4.7 illustrates top challenges of KPIs measurement.

<table>
<thead>
<tr>
<th>Top challenges of KPIs measurement</th>
<th>Count (24)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff not understanding why KPIs measurement matters</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>Reaching KPIs targets</td>
<td>24</td>
<td>100%</td>
</tr>
<tr>
<td>Reporting KPIs measures is too much effort</td>
<td>9</td>
<td>38%</td>
</tr>
<tr>
<td>Collecting data is too time consuming</td>
<td>17</td>
<td>71%</td>
</tr>
<tr>
<td>Getting support / resources from top managers</td>
<td>9</td>
<td>38%</td>
</tr>
<tr>
<td>Deciding what things to have measures for</td>
<td>25</td>
<td>63%</td>
</tr>
<tr>
<td>Extracting existing data from systems</td>
<td>25</td>
<td>63%</td>
</tr>
<tr>
<td>Analyzing causality / drivers of performance results</td>
<td>7</td>
<td>29%</td>
</tr>
</tbody>
</table>

The correlations test could not be applied since the population consists of four major libraries with 30 branches, and the general information such as budgets as well as the centralized performance management process were at the level of central libraries and not on the branches level.
5. CONCLUSIONS AND RECOMMENDATIONS

This part will provide the study’s conclusions. The study’s conclusions will be presented as they apply to the study’s purposes. Recommendations to improve the KPIs measurement are provided at the end of this part.

5.1 Conclusions

The first conclusion of the study that 80% of the UAE public libraries applied KPIs for measuring performance of library services since more than five years ago. The common top ranking reasons for the application of performance indicators were to know areas of strengths/weaknesses, to improve performance and to increase level of users’ satisfaction.

Another conclusion is that 63% of the UAE public libraries which applied KPIs depended on their executives and managers to take care of KPIs measurement activities. While 37% has formal appointed and trained corporate performance management team. Each library has its own period of time for revision for the KPIs measurement one reviewed KPIs measurement monthly, another reviewed quarterly and one reviewed irregularly.

The results determined that all libraries used manual and electronic tools for data collection. All of the responded libraries have targets based on historical data and benchmarks. All of responded libraries indicate that they manage performance measurement centrally, while the library branches role is to provide reports and statistics required for measurement. The numbers of KPIs were used 18-20 KPI used for strategic and operational goals covered all services and activities, i.e. library collection, visitors, members, services and financial performance.

63% of responded libraries spent an average of less than 1 day per a week, while 37% spent an average of 3-4 days per a week in KPIs measurement or related activities. 63% of responded libraries don’t have automated PMS, while 37% has an Automated Performance Management System (PMS). This is in consistence that KPIs required time and efforts. The purposes of training required were to convince employees of KPIs importance, to learn more about the topic and how can be applied. All libraries prefer workshops to train library staff on performance measurement and KPIs. Training courses, lectures and seminars, best practice and participation in related professional conferences are also will be helpful.

The top five challenges that libraries would like to overcome were that 1) the staff not understanding why KPIs measurement matters, 2) reaching KPIs targets, 3) collecting data is too much time consuming, 4) extracting existing data from systems and 5) deciding what things to have measures for.

The last conclusion related to the purpose of the study that 57% of libraries applied ISO11620 KPIs for measuring performance of library electronic services. The common top ranking reasons for the application of ISO11620 were that the ISO is internationally well known organization and guarantees development and updating. The libraries applied ISO 11620 KPIs have minor technical difficulties only. All libraries applied ISO 11620 were satisfied with using of ISO11620. The positive impacts perceived that the library commitment to the international standards, the ISO is a global reference, using of standard measurement formulas, and the possibility to be aligned with local needs. While the negative impacts perceived that it is sophisticated, sometimes unclear and the examples provided by the standard are not enough. One library of those which did not apply ISO 11620 shows interest to apply ISO11620 KPIs in the future.

Eventually, the researcher concludes that the results of this study were sometimes agreeing with other research results and sometimes not. The results of this study indicate that a culture of KPIs measurement among the UAE public libraries existed, while White (2002) PhD thesis research study results indicated that a culture of assessment did not exist in Florida public LAU.

The results of this study indicate that the libraries applied ISO 11620 KPIs had minor difficulties and they faced technical difficulties only. All libraries applied ISO 11620 were satisfied with using of ISO11620. While, Bellini (2004) concluded that the implementation of standard ISO 11620 was difficult and time-consuming, requiring commitment to overcome resistance from within and outside the library. But, the performance measurement had proven to be a useful and versatile tool for university management. The results of this study in line with results of White...
(2002) and Bellini (2004) in that library staff required a special training on KPIs and performance measurements, the most negative impact of using KPIs and performance measures that it was time consuming and the most positive impact was on the user’s or customers’ satisfaction.

5.2 Implications for Research
The study’s implications for research are a baseline information, data, and participant perceptions for upcoming research in the area of KPIs measurement application and use in the UAE public libraries and in other likely settings such as academic libraries. The study’s results and conclusions help researchers in the fields of librarianship and public management how are KPIs play a significant role in measuring the past and tools for planning the future.

The study was the first of its kind on KPIs measurement of the UAE public libraries. Therefore, one more implication for research is a detailed information and understanding of the existing KPIs application, its participants, difficulties and challenges, the management and communication of KPIs information within the library and its stakeholders is now available to researchers that were not until that time available.

A research implication of the study is the findings of the study help as a guide for future research. The study's results and conclusions concerning the perceptions of the current use and impact of KPIs and the assessment identify the challenges of KPIs application.

5.3 Recommendations
Recommendations of this study come in five categories arranged according to the importance that the researcher perceived. The recommendations are as follow:

- Improvement of KPIs application by adopting best practices, benchmarks, and automated performance management systems. And for those libraries that partially applied or not yet applied to get benefit from others experience in this field.

- For libraries which already applied ISO11620 to keep up the application and provide the concerned ISO TC46 with their feedback on the previous application for future improved versions of ISO11620

- Perform a continuous evaluation for the KPIs measurement process in order to enhance application, learn from experience, overcome obstacles and achieve excellence in managing performance.

- Design and organize training courses and workshops in the field of library performance measurement and ISO11620. Perform awareness programs in form of lectures, presentations and discussion panels especially in library professional events.

- Replicate the study to determine the consistency of results. Determine the scope and application of the study findings to other library settings e.g. academic libraries.

References