TQM Readiness Assessment in the Public Sector in the United Arab Emirates: The Case of the Ministry of Environment and Water, the Ministry of Finance and Industry and the Ministry of Public Works

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Abstract

TQM today is a very important quality system implemented in different countries and in different institutions, private and public; around the world .This system was recently introduced in the public sector in the UAE, both at the Federal and the local government levels. Top leaders in the Emirates have supported the introduction of quality systems in government institutions, Dubai Governments led the way in this endeavor. The main objective of the study is to appraise the TQM readiness level, as perceived by leaders (Deputy Minster, Assistant Deputy Minster, Managers, Deputy Managers, and Head of Section) as well as employees in the Federal Governments, of the three federal ministries in the UAE; namely the Ministry of Environment and Water (MOEW), the Ministry of Finance and Industry (MOFI), and the Ministry of Public Works (MOPW). These ministries were selected for the study because of their excellent initiatives in introducing quality management systems and successfully obtaining ISO 9000 certification. The European Foundation for Quality Management (EFQM) Excellence Questionnaire was used to test the TQM readiness level in each ministry. It consisted of nine related factors namely, Leadership, People, Policy & Strategy, Partnerships & Resources, Processes, Customer Results, People Results, Society Results and Key Performances Results. The survey was administered in the three ministries and the data collected were analyzed using the EFQM Formula and the SPSS statistical Packages to develop a profile for each ministry. The main finding of the study is that none of the three federal ministries has reached an adequate level of readiness to implement a TQM system. Additionally, there was no significant statistical difference between the perception of TQM readiness of leaders and that of employees in the three ministries.

Keywords: Total Quality Management, Public sector

Introduction

Background

In recent years, many quality management programs have been introduced into the public sector in many countries around the world. In search of excellence for their organizations, public sector managers have gradually adopted quality-based programs and methodologies to improve service to their customers and stakeholders. This trend has reached the United Arab Emirates (UAE) in the last few years. The Government of Abu Dhabi introduced the H.H. Sheikh Khlaifa Award for Excellence in 1996, and in 1997 the Government of Dubai introduced the Dubai Excellence Award with an emphasis on the local government sector. In 2000, the UAE Cabinet issued a decree (decision No.137/6) in which it required all federal ministries to apply for ISO 9001 certification accreditation, and to successfully complete the adoption of ISO 9001 by the year 2003 as a first step toward a full-fledged total quality management and excellence program in the federal government agencies. A number of ministries such as the Ministry of Environment and Water (MOEW) (previously Ministry of Agriculture and Fisheries), the Ministry of Finance and Industry (MOFI), and the Ministry of Public Works (MOPW) were the first ministries in the country to succeed in obtaining the ISO certification issued by the

ISO 9001 certification Standards Unit at the MOFI, while other ministries are on their way to get certified. The leaders in these three ministries planned to continue the efforts to improve quality of services to their stakeholders by implementing the total quality management and excellence programs. However, before embarking on new initiatives, an assessment of the readiness ought to be done in the ministries, to diagnose the ministries' readiness for TQM implementation. A rigorous gap analysis based on TQM standards should be performed.

Statement of the Problem

Organizations that value excellence in the public sector look for cooperation, teamwork, leadership through involvement, focus on clients and stakeholders, adoption of long term planning and continuous improvements, empowerment and fact-based decision making. Any organization wanting to move to a higher level of excellence must first know where it currently stands in terms of the above-mentioned key factors. As a result, an organization must first identify its current position to be able to determine future directions and priorities. Assessment is therefore a critical step before the adoption and implementation of new quality systems and excellence programs. The three federal ministries have all achieved ISO 9001 certification and are looking to move on in their quest for total quality excellence journey. There are doubts, however, whether these ministries are sufficiently ready to implement TQM. In this project, a methodology is introduced to enable these ministries to empirically and realistically assess their current positions, in order to accurately and efficiently plan the implementation of their total quality and excellence programs. Discussions with senior officials and literature show that this has never been done before in any organization at the federal or local levels in the UAE.

Research Objectives

The main goal of this research project is to empirically and realistically assess the three ISO 9001 certified federal ministries for their readiness to continue their quality improvement journey aiming to implement a more demanding and rigorous TQM and excellence programs. The specific objectives of the study are:

- Asses the readiness of following federal ministries: MOEW, MOFI and MOPW for TQM implementation
- Identify the weakness and strengths in MOEW, MOFI and MOPW hiding/ supporting the implementation of the TQM system
- Provide an organizational profile for the three ministries
- Compare the performance between and within the three ministries
- Provide an empirical tool and systematic procedure for readiness that could be used by other ministries wanting to assess their current position

Importance of the Study

Leadership at the MOEW, MOFI, and MOPW have to carry-out extensive work to be able to drive their ministries to a higher level of excellence. The findings of this research project are important because of the following main reasons:

1. This study will provide leaders at the federal government level with an empirical assessment tool that will help them monitor the present organizational operation system for ministries and agencies.
2. The readiness assessment test will likely reduce time and cost of the implementation process.
3. The assessment results will measure the gap in perception between managers and employees about the readiness of their organization. This will identify possible areas where there is resistance to change, which should be dealt with before the implementation process.
4. Data collected together with the findings will constitute a benchmark to the organization, against which future results could be compared in order to monitor and measure improvements

Research Hypotheses

The study will test the following hypotheses:

1. There is no difference between the organizational profiles of the ministries
2. The ISO 9001 certified federal ministries are not ready for TQM implementation
3. There is no difference of perception for readiness between leaders and employees at the ministries

Scope and Limitations

The scope of the study is limited to the three federal ministries, which have obtained ISO9001 certification namely, MOEW, MOFI and MOPW. Other federal ministries or public organizations are not covered. The selection of these three ministries is logical and appropriate, because they are the only federal agencies with an already implemented quality program (ISO 9001). Another limitation may arise in the fact that the questionnaire asks respondents about their perception of their organizations' readiness, and there is fear that respondents may not accurately reveal the current conditions due to the subjectivity or biases of the human nature. However, the rigorous design of the questionnaire, together with the training provided before administering the survey, will likely decrease the risks and increase the chance of providing objective answers.

Literature Review

Introduction

Several writers or quality experts (e.g. Juaran, Zairi) have written about quality in management or systems. They have provided different definitions of quality. For Juran, quality is "fitness for use "(Zairi, 2005). Deming's definition of quality is "satisfying customer beyond expectations" (Zairi, 2005), while Crosby observes that "Quality is conformance to the requirements, and quality is free" (Zairi, 2005). These definitions of quality have been identified in the early stages of quality emergence, and have been slightly refined with time. However, Total Quality Management (TQM) has various definitions used in different sectors. In the USA, it was first used by the United States Department of Defense in reference to a management philosophy. This philosophy focuses on customer's satisfaction through quality improvement (Rosenhoover and Kuhn, 1996). Rosenhoover and Kuhn (1996) defined the term

as a: "customer-oriented philosophy of management that utilizes total employee involvement in the relentless daily search for improvement of quality products and services through the use of statistical methods, employee teams, and performance method " (p.436). In addition, Cohen (1994) has defined TQM as follows: "Total quality management is a simple but revolutionary way of performing work. Total means applying to every aspect of work, from identifying customer needs to aggressively evaluating whether the customer is satisfied. Quality means meeting and exceeding customer expectations. Management means developing and maintaining the organizational capacity to constantly improve quality" (p.450).

These definitions of quality and total quality management share the aims of satisfying customer needs and concentrating on continuous development, which are the main objectives of today's private and public organizations. The philosophy and practice of management introduced by TQM have resulted in TQM being considered as evolutionary rather than revolutionary (Amsdene et al., 1996). However, Amsden et al., (1996) claimed in their paper that TQM was revolutionary, and had disagreed with many business people and academicians who considered TQM as evolutionary.

TQM in the Public Sector

Serious thinking about the adoption of TQM in the Public sector started with the emergence of new public management in Western countries in the early 1980's. The opponents of the a new public management model thought that the conventional model of public administration fell short of expectations of citizens in terms of service quality and satisfaction. Therefore, they strongly recommended the adoption of TQM, which was relatively successful in the private sector and in the public sector. Total Quality Management is a concept or practice that started in Japan after World War II as the country started to rebuild its economy. Deming started TQM in Japan in 1950 by introducing PDCA cycle (Plan-Do-check-Act) to Japanese manufacturing. During this period TQM was in the hands of the private sector. The efforts culminated with Japan introducing the Deming prize for quality. TQM moved to the West at later times. In 1988 the US Defense Secretary issued an order for implementing the principles of TQM. In 1993, a national committee in the USA was set up under the chairmanship of Al-Gore, the vice president. The recommendations of the committee were culminated in a National Performance Review (NPR (Lin and Ogunyemi, 1996). The NPR had the objective of making the federal government less expensive and more efficient as well as of changing the culture of bureaucracy in the direction of promoting initiative and continuous improvement (Zairi 2005, p.30). The recommendations were formally implemented. TQM was also formally adopted by the federal government agencies. Similar to Japan's Deming prize, the USA established the Malcolm Baldrige National Quality Award (MBNQA) in 1987. This was followed by the European Foundation for Quality Management (EFQM) in 1992.

The above discussion reflects the increasing interest in TQM application in the public sector. Japan, USA, and Europe have all adopted the TQM philosophy in both the private and public

sectors. In the public sector, TQM awards have contributed to considerable achievements and improvements. Swiss (1992) has investigated whether TQM was useful in the public sector when adopted without any changes, as it was created initially for the private sector. He discussed the orthodox form of TQM in government from different angles, namely, from the point of view of service, products, government customers, input and process, and government culture. Swiss (1992) concluded that TQM could do more harm than good, as TQM focused on the specific demands of direct customer rather than on needs. At the same time, he concluded that TQM could make useful contributions if introduced with sensitivity to governments' unique circumstances. Halachmi (1995) undertook a study to answer the question whether TQM was suitable for the public sector. He discussed the previous management approaches. One of them was the planning, programming, and budgeting system (PPBS) introduced in the United States 20 years ago. Noting that the PPBS failed to achieve the objective of the system, he linked this failure to TQM introduction to the public sector, claiming that TQM will not suit the public "run way", as TQM needs a long period of development not a short period. Halachmi (1995) claimed that TQM was not made to provide result in the short run but was built for the long run. He also discussed TQM and organizational rationality as well as customer orientation. While TQM is customer focused, this is not the case in the public sector. Finally, he concluded that TQM may work in the public sector, but advised not to rush into it until exploring the organization services' recipients and customers. Radin and Coffee (1993) criticized TQM implementation in the public sector. They discussed TQM from the point of view of productivity values, leadership values, and changing organizational culture. They noted that these three traditions created a complex setting for TQM. However, TQM could still be beneficial if the following are considered: The type of organization; Interest group dominance and policy agreement; Leadership longevity and tenacity; Crisis or external motivation for change; Size; and Competency of the organization members. They concluded that the 14 criteria of Deming were not suitable for all public organizations. Each organization had to customize TQM to fit its own unique needs. They attributed the failure of TQM in the public sector to its high costs to the government compared to its benefits. The above three studies were not very optimistic about introducing TQM in the public sector unless some detailed testing and careful studies of the concerned organization were conducted to ensure the ultimate benefit of this management philosophy, and to reduce the loss and increase the benefits to government organizations. Because these studies were conducted in the early 1990s, TQM has not reached maturity level among the different public organizations, government leaders, and government policy makers. While today's private and public organizations are working toward providing quality goods and services, customers are also looking for the quality goods and services. Since the public culture also has changed toward asking and looking for the value of their money, quality becomes essential in today's life. Other writers, such as MaCambridge and Tucker (1988) have investigated deeper into the government sectors, and believed in the positive contribution of the new management

philosophy and its effectiveness in the public sector. They have studied selected government entities in their countries to find where the implementation stage has reached, what the problems or barriers that were faced by these governments, what the causes of these barriers were, and how they can be removed or reduced in the future to get the best out of TQM implementation. McCambridge and Tucker (1998) carried out a study on the US Department of Transportation. They surveyed mid-level managers in 26 states between 1994 and1995 to assess their perceptions about the progress of the TQM implementation in their departments, and the associated problems of implementation. One of the surveys on a government entity concluded that "the overwhelming majority of managers believe that TQM principles add to the value of management practice in their department (beyond traditional principles)" (McCambridge and Tuker 1998, p. 53). Other researchers have also studied how to avoid failures in the implementation to get the best and effective result. Nwabueze and Kanji (1997) carried out their research in the health sector in the United Kingdom, and selected two hospitals with semi-autonomous status (from government control in the United Kingdom), that adopted and implemented TQM. The researchers wanted to explore the type of failure made by the management. In their studies, the researchers were not criticizing the TQM implementation in these hospitals or arguing whether TQM was suitable for the health organizations, but provided indication of the ways of implementation in each hospital by the management. They concluded that if attention to necessary modification was made before implementation, the management of the two hospitals could have avoided failure. The researchers concluded that the two hospitals implemented TQM; it was not in line with any of the traditional orthodox model of TQM. (Nwabueze and Kanji, 1997). They proposed for the two hospitals a system model of TQM implementation, which would provide essential and necessary requirements for an action plan for the effective implementation of TQM. The authors adjusted the TQM implementation track for the two hospitals as they were confident that the proper TQM implementation in the organization of government, semi-government, or private sector would have a major impact on the efficiency and improvement of work. In addition, E Sa et al. (2003) have conducted a research on one specific criterion of TQM, which is leadership. They studied the role of leadership in the quest for excellence in 85 Portuguese municipalities. Leadership was one of the nine criteria of TQM standards, or EFQM standards in Europe. Leadership has had the main role for driving TQM implementation for successful results. If the leadership was not assessed before the implementation and its commitment ensured for implementation, that would have resulted in a negative impact on the introduction of TQM. The TQM gurus emphasized the leadership criterion for ensuring proper implementation and avoiding failure. These authors have also concluded that the leadership role and competencies had a positive impact on leadership excellence. The writers have argued that TQM is the new management philosophy to be adopted and implemented correctly, and to be planned well in order to get the maximum benefit from this philosophy in the organization. Political leaders have made a considerable impact, especially in the USA,

for launching TQM in government institutions. In other countries, the government leaders have rushed to implement TQM in government sectors with the aim of getting maximum benefit from implementation of such management system in their organizations. However, TQM experts have warned against rushing, unless sufficient exploration or assessment has been made of the whole organization's readiness (Halachmi1995). The review of literature has advised organizations willing to implement TQM to engage in a pre-implementation assessment to ensure the readiness of the organization for the implementation based on the TQM criteria, such as EFQM criteria. EFQM has published an assessment questionnaire based on these criteria for the organization's assessment, and this has been adopted by most organizations looking to introduce this type of management philosophy. Today, TQM is diffusing in governments around the world since it started in Japan in the private sector in the early 1950's. Turkey is a good example that implemented TQM in the government sector. The Ministry of National Education (MONE) established the National Quality Award in 1993, two years after establishing KalDer excellence award in 1991 for spreading quality in Turkey (AKSU, 2003). After Turkey implemented TQM in the Ministry of Education, a Professor at the Turkish University of Inoun, Malatya, investigated the level of readiness in the (MONE) for TQM implementation (AKSU, 2003). AKSU (2003) conducted his study based on nine criteria or dimensions (i.e. leadership, vision, involvement, continuous improvement, training and education, ownership, rewards and recognition, yearning for success, focus on customer) to see the level of MONE readiness for TQM. He based his study on the 319 administrators working in the central organization. The researcher concluded that MONE was ready for TQM implementation, except that it had to motivate its staff with reward and recognition. Although AKSU's research revealed that the MONE was ready for TQM implementation, the result might have been biased since the assessment was made after MONE had implemented TQM, and considerable efforts were made by different managers and leaders in MONE to spread TQM in the ministry and to support cultural change towards TQM philosophy. Had this assessment been done before implementation, it would have probably provided a clearer picture of MONE's readiness for such change. Cultural change would have had a major impact on people's perception about the system. No literature or studies were found on assessing an organization's readiness before implementing TQM in UAE.

TQM Movement in the UAE

TQM started in the United Arab Emirates with the introduction of H.H. Sheikh Khalifa Excellence Award in 1996 in Abu Dhabi. One year later, H.H. Sheikh Mohamed bin Rashid Al Maktoum, Dubai Crown Prince and Defense Minister at that time (Vice President of the UAE, Prime Minister and Ruler of Dubai currently), instructed the Government of Dubai to establish the Dubai Excellence Award for the government performance program in 1997. These two awards have contributed a lot in changing the management philosophy in the public sector, and proved that the old management style in the government can be easily changed with a new philosophy in management without major difficulties or

barriers. The success in the local government is quite visible because this philosophy has been fully supported by the highest political leaders in the country. The Dubai Excellence Award has adopted the EFQM standards and is assessing and evaluating the effectiveness of local government operations every two years according to the nine criteria of EFQM. The media has played a good role in disseminating and publishing different types of news about different types of TQM activities in UAE. An Internet search for the list of news about TQM written in the period between 1-1-1996 until 31-12-2005 by the Emirates News Agency , the daily Albayan newspaper, the daily Al Khaleej newspaper, and the daily Khaleej Times newspaper showed over 500 news briefs about TQM activities in the UAE, during the above period. This is a good indication that UAE organizations, either at the local government or federal government levels, are aware of the new management concept, which has already been implemented in the local government. These activities will be eventually implemented in the federal government, as the local and federal governments complement each other, since they are already coordinating their activities in the UAE. At the federal government level, several ministries have started implementing ISO certification and three ministries have been ISO certified since 2001. Other ministries are currently in the process of implementing ISO certification. In addition, unpublished graduate research projects done at the University of Sharjah (e.g. AlHammadi, 2002, AlAmiri, 2003, Butti, 2003, AlNuaimi, 2004) about the application of TQM in the private sector, government and semi-government agencies. These studies revealed the great interest of the TQM implementation in the UAE in different sectors.

Research Methodology

Survey Instrument

In order to have reliable questions for collecting the necessary data for the research, the standard questionnaire developed by the EFQM (European Foundation for Quality Management) was used for collecting the information about the perception of TQM from the targeted sample. The Questionnaire was developed by EFQM to be used by any organization or enterprise considering itself as business excellence oriented organization. The questionnaire consists of 50 questions; it assesses the organization on nine criteria: leadership, people, policy and strategy, partnerships and resources, processes, people results, customer results, society results, and key performance results. Developed with the questionnaire, scoring formula to be used for calculating the profile of the organization, based on the answer to each question (A = fully achieved, B = considerable progress, C = some progress, and D = not started), (refer to the appendix -4 for more details about the calculation method). Communication was established with the Publication Department of the EFQM, and one copy of the original questionnaire was purchased. Official approval for using this questionnaire from the EFQM organization, and translating it into the Arabic language, was granted by the EFQM. The translation to Arabic was done by a certified legal translator in UAE. The translated text was reviewed to insure compliance with context. A test for this questionnaire was carried out in the MOEW. Questionnaires were distributed to 30 randomly selected staff members including all leaders in the ministry and the questionnaires were analyzed using the method

outlined in the EFQM standard. The test results provided a good foundation to start the research on this subject, as potential weaknesses and strengths were revealed. Also this exercise helped to conclude that training was essential before distributing the questionnaire to the staff or at least for the group which was in charge of distributing and collecting the questionnaires in their ministry.

Sampling and Data Collection

Three federal ministries were selected as the population; MOEW, MOFI and the MOPW. These ministries were selected based on the initiatives taken during the federal government activities of ISO 9000 certification. The leaders and employees of the ministries have displayed excellent efforts in achieving ISO certification for their ministries, and showed that they were willing to adopt the new management system introduced to them. Moreover, it is worth noting that the major activities of these ministries took place in their headquarters in Dubai. The questionnaires were distributed to 60% of each ministry's total staff working in Dubai, including the leaders. A total of 264 questionnaires were distributed (as a booklet) after being translated to Arabic and certified.

Three representatives were nominated by the Assistant/ Deputy Minister from each ministry, and training was provided at the MOEW and MOPW offices. The training was conducted for one hour for each representative, and mainly focused on the following areas:

1. Objectives of the research
2. The reason for selecting their ministry
3. The origin of the questionnaire
4. The meaning of coding the questionnaires for the different levels of leaders in the ministry to be used in different detailed analysis. The codes used in the detail analysis were: (DM=Deputy Minister, ADM=Assistant Deputy Minister, M=Manager, HS=Head of Section, E=Employees)
5. The meaning of the following codes used in the questionnaire: A=fully achieved, B=considerable progress, C=some progress and D=Not started
6. Representatives were responsible for answering any question raised by their staff to the extent of their knowledge

Representatives were asked to contact the researchers directly for any information required or if they were unable to answer any question that a participant in the ministry might have. The questionnaires were collected after 15 days from the date of distribution from the three ministries. The following table shows the numbers of the questionnaires collected from each ministry together with the response rate.

No.	Ministry	Leaders Questioners	Employees Questionnaires	Total	Questionnaires provided	Response Rate
1	MOEW	23	35	58	60	96.66
2	MOFI	6	23	29	60	48.33
3	MOPW	14	74	88	144	61.11
	Total	43	132	**175**	264	**66.29**

Table 3.1: Summary of Questionnaires Distributed at Three Ministries

The collected Questionnaires were grouped by ministry, and numbered sequentially from 1-175 for proper control of the data. Thirty five questionnaires were identified to have missing data. Some questionnaires had complete questions that were not answered, and some had part of questions not answered. It was decided to exclude the questionnaires with three and more missing data (part of question) from the data sample, to avoid any effect on the results of any analysis. Consequently the breakdown of questionnaires usable in the study after deleting incomplete questionnaires is shown in Table 3.2.

No.	Ministry	Leaders: # of questioners returned	Employees: # of questionnaires returned	Total number of questionnaires returned	Total number of questionnaires sent	Response rate (%)
1	MOEW	23	35	58	60	96.66
2	MOFI	6	22	28	60	46.67
3	MOPW	13	62	75	144	52.08
	Total	42	119	**161**	**264**	**60.98**

Table 3.2: Summary of Usable Questionnaires

Data Analysis and Results

Introduction

The data was analyzed using two methods, the EFQM formula and the SPSS package. The EFQM formula is based on the EFQM standard designed by the European Foundation for Quality Management to find the profile of data under study (see appendix-4), while the SPSS package was used to compute statistics and perform simple t-tests and independent t-tests.

Profiles Based on the EFQM Formula

The data analysis based on the EFQM formula (see appendix-1) was done on four levels and 15 dimensions. Moreover, the t-tests were done on the following:

1. Aggregate data analysis of all ministries
2. Leaders and employees aggregate data analysis
3. Separate data analysis of each ministry (MOEW, MOFI and MOPW)
4. Analysis of data within each ministry for leaders and employees

The above levels in the analysis were broken down to 15 dimensions, for more detailed analysis, and to have a complete picture of the sample of population perceptions about TQM readiness in their ministries. The 15 dimensions were:

1. Aggregate data analysis.
2. Aggregate employees' data analysis.
3. MOEW data analysis.
4. MOFI data analysis.
5. MOPW data analysis.
6. MOEW leaders' data analysis.
7. MOEW employees' data analysis.
8. MOEW aggregate data analysis.
9. MOFI leaders' data analysis.
10. MOFI employees' data analysis.

11. MOFI aggregate data analysis.

12. MOPW leaders' data analysis.

13. MOPW employees' data analysis.

14. MOPW aggregate data analysis

The profile will be determined by the score obtained based on the EFQM formula mentioned earlier as a guideline. The EFQM suggests: "many organizations will score about 20%, with very good organizations scoring about 50%, and world class performance registering 75%- provided the questions have been realistically scored". EFQM, Determining Excellence (1999). Based on the above dimensions of analysis of the data collected from the three ministries in the study, the following graphs show the overall picture or profiles of the ministries' perception about TQM implementation readiness.

	1. Leadership	2. Policy & Strategy	3. People	4. Partnership & Resource	5. Processes	6. Customer Results	7. People Results	8. Society Results	9. Key performance Results	Total Score
Overall Profiles	36.86	34.92	29.94	33.14	28.22	29.04	24.44	31.35	27.73	31.62

Table 4.1: Overall Ministries' Perceptions on the TQM Readiness

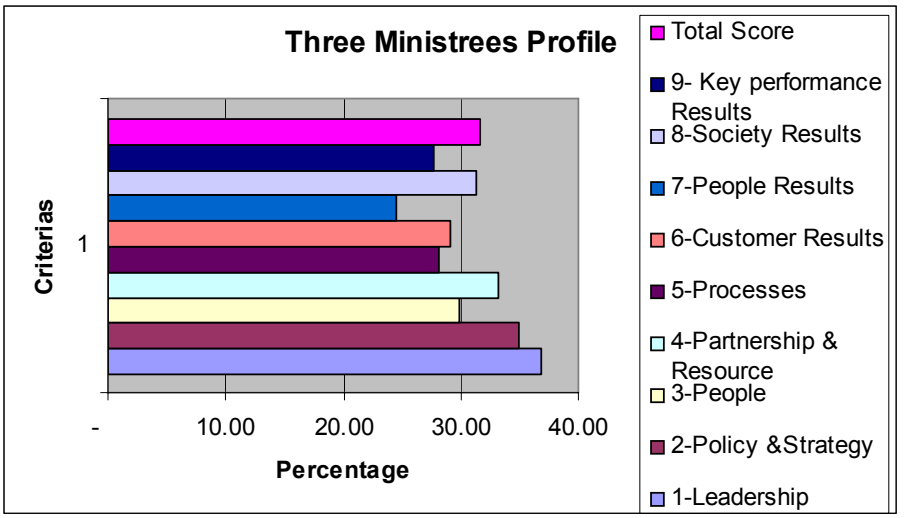

Figure 4.1: Three Ministries Profile

This graph indicates that four criteria out of nine (leadership, policy & strategy, partnerships & resources, and society results) are between 30% and 40%, while the other five criteria (people, processes, customer results, people results, and key performance results) are below 30%, which shows that there are weaknesses in all the ten criteria. The ministries have to perform an in-depth analysis to find out the reasons behind this perception of weakness in these criteria, and to develop a plan for enhancing these factors before any implementation process should start. This profile shows that the three ministries with ISO 9000 certification have a weak position in the factor "processes". This is somewhat surprising because all the three ministries have been ISO 9000 certified for more than three years. This means that the MOEW, MOFI and MOPW have not adequately fulfilled the requirements

in the processes factor of TQM. They had an aggregate score of only 28.22% perception level in the processes criterion.

An analysis of the EFQM formula in the aggregate leaders' data of the ministries profile, showed a small change in the perception compared to the aggregate ministries perception.

	1. Leadership	2. Policy & Strategy	3. People	4. Partnership & Resource	5. Processes	6. Customer Results	7. People Results	8. Society Results	9. Key performance Results	Total Score
Leaders	37.38	33.41	31.50	31.97	39.37	33.44	25.60	29.79	26.56	32.35
Employees	36.67	35.31	29.38	33.55	37.81	27.48	24.03	31.90	28.14	31.35

Table 4.2: Leaders and Employees Profile Perceptions on the TQM Readiness

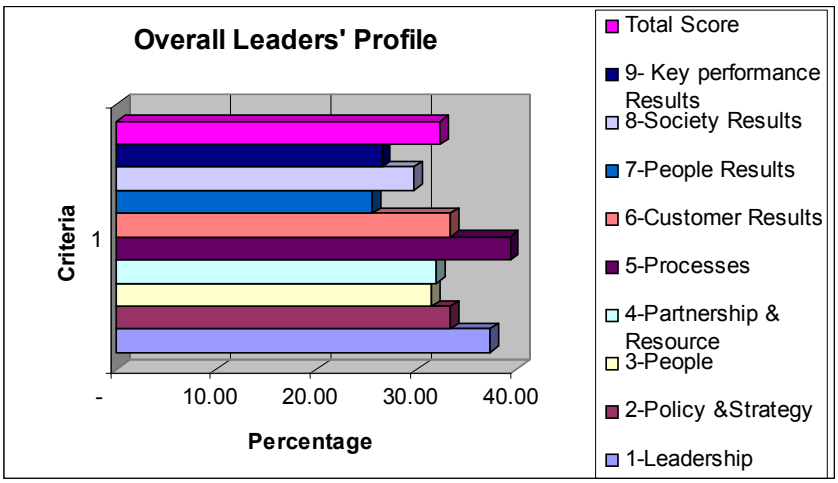

Figure 4.2: Overall Leaders' Profile

The graph above on aggregate leaders' perception points out that out of the leaders' perceptions in nine criteria, the scores of three criteria (people results, society results, and key performance) are below 30% while the other six criteria scored between 30% and 40%.This is almost similar to the aggregate ministries' data analysis.

While aggregate employees' perception shows a slight change in the perception towards the nine criteria, four criteria (people, customer results, people results, and key performance results) have scores below 30% (29.38% 27.48%, 24.03%, and 28.14% respectively).

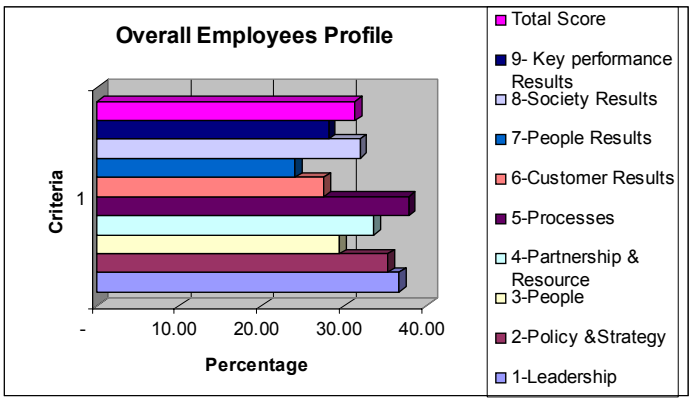

Figure 4.3 Overall Employees Profile

However, the results show that there is no difference in total score of perceptions between leaders and employees (they are 32.35% and 31.35%, respectively). Table 4.2 shows that the two groups (leaders and employees) agree on some criteria and they slightly differ on some other criteria. It is also noticed that the total scores in the aggregate data analysis, the aggregate leaders and the aggregate employees are almost equal. The scores are 31.62%, 32.35% and 31.35%, respectively. Employees agree with the aggregate perception. In the third level of the EFQM data analysis, each ministry data has been analyzed separately to see the perception as a ministry alone compared with other ministries in the study.

	1. Leadership	2. Policy & Strategy	3. People	4. Partnership & Resource	5. Processes	6. Customer Results	7. People Results	8. Society Results	9. Key performance Results	Total Score
MOEW	41.66	36.84	33.82	31.96	40.58	31.96	28.05	29.33	25.33	33.29
Leaders	37.88	32.49	27.74	30.32	36.56	32.11	25.35	28.91	24.74	30.82
Employees	44.15	39.69	37.82	33.03	43.22	31.96	29.83.	28.87	26.71	34.92
MOFW	38.79	38.79	32.80	40.21	43.48	35.00	33.54	43.67	39.20	38.18
Leaders	36.63	44.42	48.83	43.30	59.45	45.55	32.17	46.22	38.90	44.41
Employees	41.15	39.02	29.92	41.19	41.10	33.69	35.44	44.95	41.06	38.22
MOPW	31.90	31.47	25.42	30.79	33.84	24.18	17.80	28.07	24.00	27.31
Leaders	36.85	29.96	30.17	29.75	35.07	30.43	23.00	23.74	23.35	29.44
Employees	30.86	31.79	24.43	31.03	33.59	22.97	16.71	28.97	24.14	26.96
Leaders Overall	37.38	33.41	31.50	31.97	39.37	33.44	25.60	29.79	26.56	32.35
Employees Overall	36.67	35.31	29.38	33.55	27.43	31.90	29.14	31.90	28.14	31.35
All	36.86	34.92	29.94	33.14	28.22	29.04	24.44	31.35	27.73	31.62

Table 4.3: Summary of the Ministries Profile

The graph below shows the MOEW profile in nine criteria on TQM readiness.

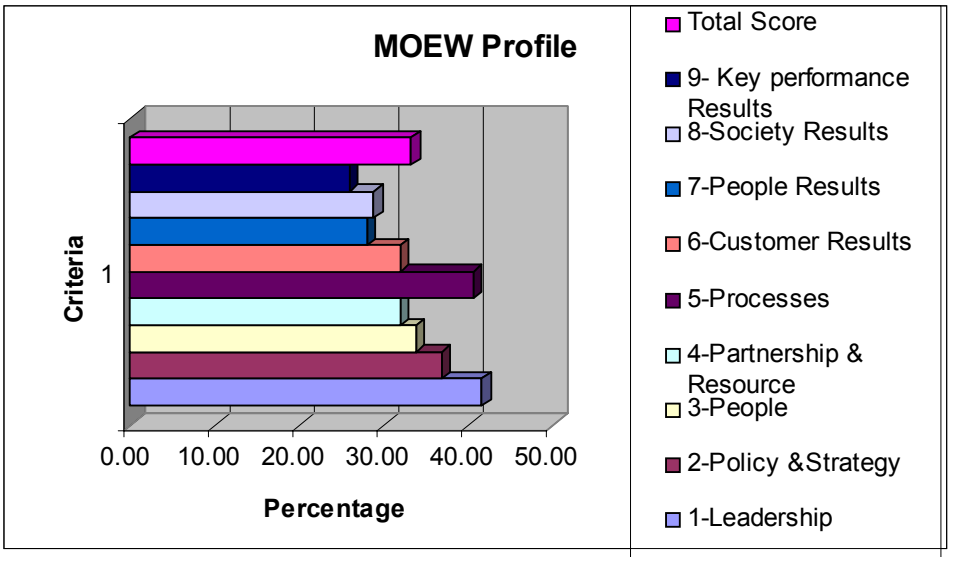

Figure 4.4: MOEW Profile

The MOEW has two criteria (leadership and processes) which have scores slightly above 40%, namely 41.66% and 40.58% respectively. The MOEW has three criteria (people results, society results, and key performance results) with scores below 30%. While the total score of the MOEW is 33.29%. In comparison, the MOFI has three criteria with scores above 40%, partnerships and resources had a score of 40.21%, processes had a score of 43.48%, and society results had a score of 43.67%. The other criteria scores are between 30% and 40%, while the total score of the MOFI is 38.18%, which is higher than the MOEW. These figures can be seen in Table 4.5 and Figure 4.5.

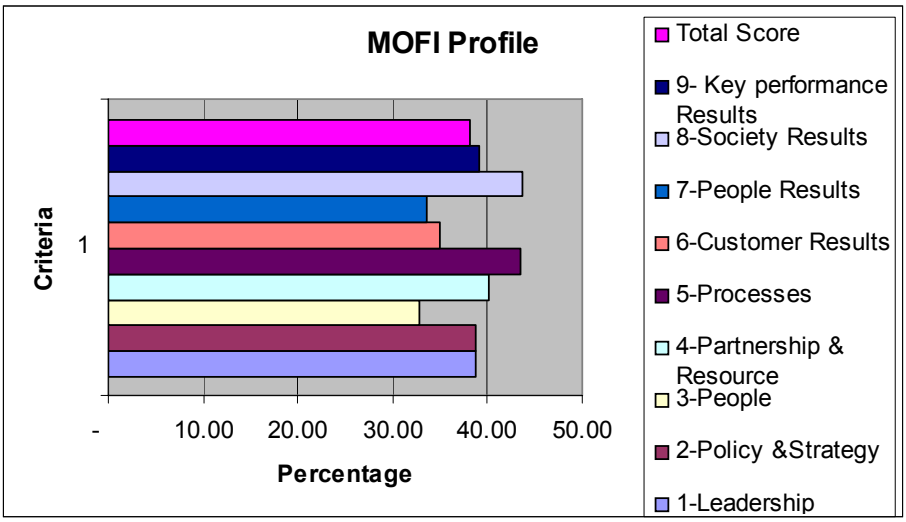

Figure 4.5: MOFI Profile

Figure 4.6 shows the profiles of the MOPW in the study. The graph indicates that the MOPW has five criteria with scores below 30%. People scored 25.42%, customer results scored 24.18%, people results scored 17.18%, society results scored 28.08%, and key performance results scored 24.00%. The other criteria had a score between 30% and 40%. The total score of the MOPW is 27.31% which is lower than the scores of both the MOEW and the MOFI.

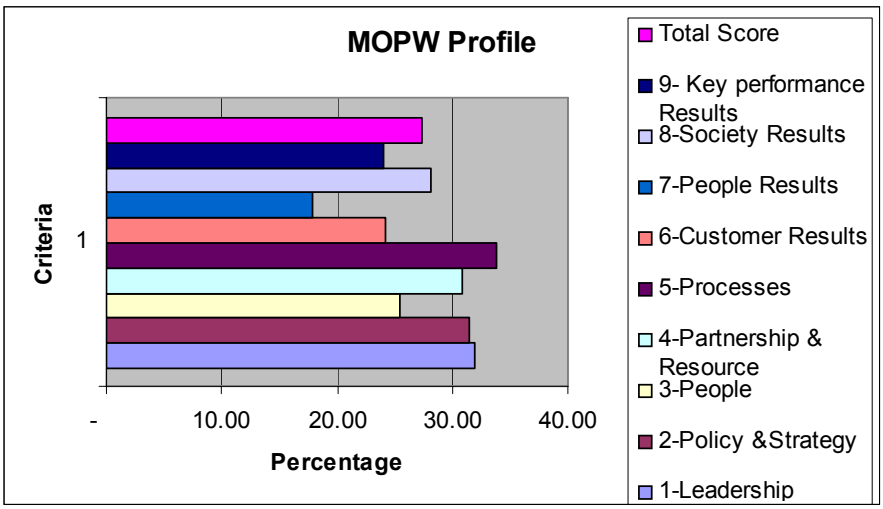

Figure 4.6: MOPW Profile

Similarly, the results show that five out of nine criteria had scores below 30% and four criteria had scores slightly above 30%. This reflects an overall weakness in all the TQM dimensions (factors). The analysis, which is based on the EFQM formulas of data collected from the three ministries, produced results that clearly show the weaknesses in all the nine criteria of TQM in the three ministries.

The management of the three ministries have to seriously tackle these weaknesses before carrying on any further initiatives of embarking on new quality endeavors in order to avoid any failure that may be costly in terms of time and money. Based on the evaluation of the Dubai Excellence Award committee in 2005; the International Dubai Ports, the best in the golden group, scored 56.7%, whereas the Department of Economic in the other group scored 50.9% (Albayyan, 18th April 2006, no.9435).

Statistical Analysis Using the SPSS Package

Responses to each item were coded using the following scale: A =4, B=3, C=2 and D=1. Criteria scores are interpreted based on their mean values. A cut-off point of 2.5 to measure the level of TQM readiness was used. This value (2.5) is the middle point of the scale from 1 to 4 used by respondents to quantify their judgment of a level of a criterion (1+2+3+4)/4 = 10/4 =2.5). When the mean value calculated is lower than or equal to 2.5, the level of TQM readiness is deemed not adequate, and when the mean value is greater than 2.5 the level of TQM readiness is adequate. A simple t-tests was made to test the level of TQM readiness in the ministries, as well as independent t-tests to check if the perception of leaders was significantly different from the perception of employees for each ministry, at the significance level of 0.05 (5%).

		MOEW			MOFI			MOPW	
	mean	STD	Sig.	Mean	STD	Sig.	mean	STD	Sig.
Leadership	2.25	0.68	0.008	2.20	0.72	0.041	1.98	0.57	0.000
Policy & Strategy	2.10	0.66	0.000	2.20	0.75	0.049	1.99	0.58	0.000
People	2.01	0.69	0.000	1.99	0.80	0.002	1.77	0.53	0.000
Partnerships & Resources	1.85	0.62	0.000	2.25	0.50	0.014	1.95	0.60	0.000
Processes	2.21	0.62	0.001	2.35	0.82	***0.349***	2.03	0.69	0.000
Customer Results	1.93	0.59	0.000	2.07	0.78	0.009	1.73	0.66	0.000
People Results	1.81	0.63	0.000	2.04	0.82	0.007	1.56	0.54	0.000
Society Results	1.88	0.83	0.000	2.41	0.86	***0.610***	1.85	0.83	0.000
Key Performance Results	1.77	0.63	0.000	2.20	0.54	0.009	1.72	0.69	0.000

Table 4.4: t-test Analysis for the Three Ministries

Table 4.4 above shows that, the MOEW and MOPW had mean scores significantly lower than 2.5 for all the nine criteria. This suggests that leaders as well as employees as an aggregate perceive a weakness in their respective ministries in all the nine dimensions (factors) of TQM. Consequently, they clearly feel that their ministries are not ready to embark on a TQM implementation. As far as the MOFI is concerned, the mean of seven out of nine criteria is significantly lower than 2.5 and only

two dimensions, processes and society results had a mean score not significantly lower than 2.5. This means that the staff at MOFI feels that their ministry has performed better in the two areas of processes and society results.

The results of the statistical analysis concur with the results of the EFQM profile analysis, which statistically confirms that the TQM readiness level of the three ministries is not adequate. Leaders and employees alike do not feel that respective ministries are adequately prepared to move on to the next level of quality excellence despite the fact that they are ISO 9000 certified. This in turn also indicates that the staff in the three ministries do not feel that the ISO 9000 requirements have been properly implemented.

Table 4.5: Independent T.test Analysis for the Ministry of Environment and Water-MOEW

	Leaderships			Policy and strategy			People			Partnerships and Resources		
level	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.13	0.66	0.313	1.93	0.56	0.111	1.83	0.57	0.104	1.91	0.62	0.651
employees	2.32	0.69		2.22	0.71		2.13	0.74		1.98	0.61	
	Processes			**Customers**			**People Result**			**Society Results**		
	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.09	0.63	0.247	1.91	0.55	0.808	1.76	0.66	0.619	1.91	0.86	0.837
employees	2.29	0.60		1.95	0.62		1.85	0.62		1.86	0.82	
	Key Performance											
	mean	ST.D	sig.									
leaders	1.74	0.59	0.789									
employees	1.79	0.67										

Table 4.6: Independent T.test Analysis for the Ministry of Finance and Industry-MOFI

	Leaderships			Policy and strategy			People			Partnerships and Resources		
level	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.10	0.74	0.696	2.33	0.76	0.648	2.46	0.86	0.103	2.30	0.54	0.788
employees	2.23	0.73		2.17	0.76		1.86	0.75		2.23	0.50	
	Processes			**Customers**			**People Result**			**Society Results**		
	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.78	0.92	0.148	2.37	0.75	0.314	1.96	0.69	0.803	2.38	1.02	0.931
employees	2.23	0.77		1.99	0.78		2.06	0.86		3.42	0.84	
	Key Performance											
	mean	ST.D	sig.									
leaders	2.16	0.77	0.834									
employees	2.22	0.48										

Table 4.7: Independent T.test Analysis for the Ministry of Public Works-MOPW

	Leaderships			Policy and strategy			People			Partnerships and Resources		
level	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.16	0.42	0.195	1.88	0.54	0.951	1.89	0.58	0.373	1.90	0.50	0.732
employees	1.94	0.59		1.99	0.6		1.74	0.52		1.96	0.63	
	Processes			**Customers**			**People Result**			**Society Results**		
	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.	mean	ST.D	sig.
leaders	2.05	0.58	0.916	1.91	0.67	0.291	1.75	0.63	0.162	1.71	0.48	0.523
employees	2.03	0.72		1.69	0.66		1.51	0.52		1.88	0.88	
	Key Performance											
	mean	ST.D	sig.									
leaders	1.84	0.59	0.484									
employees	1.69	0.71										

(5% significance level was used)

The results of the Independent T-test analysis aim to find out whether there are differences between the perception of leaders and the perception of employees in each ministry, as far as TQM Readiness is concerned. The Independent T-tests for the three ministries revealed that there is no significant difference between the perception of the leaders and that of the employees in these ministries. Tables 4.5, 4.6 and 4.7 above, show the detailed results of these tests. Unfortunately, this is not good news for the three ministries since the leaders' perception is also negative about the readiness level. On the other hand, this could be seen as a positive result in that both leaders and employees are honest and aware about the weaknesses their respective ministry has, and this will help in devising a plan to redress the situation in order to increase the likelihood of a suitable implementation of an excellence program.

Conclusion

Data were collected through questionnaires from three federal ministries, to find-out if these ministries were ready for TQM implementation. These data were analyzed in two ways: Using the EFQM profile analysis and the SPSS statistical Package to compare the means of perceptions. The analysis indicated that, there is no difference between the organizational profiles of the three ISO 9001 certified federal ministries, and that these ministries are not ready for TQM implementation. Furthermore, the results showed that there was no difference of perception for readiness between leaders and employees at the ministries. The findings through two parts of analysis showed that the level of TQM readiness of these ministries was not adequate in spite of their ISO 9000 certification; and the efforts made within each ministry to follow the standards of such quality systems were not sufficient. Moreover, the results show that these ministries had serious weaknesses in the processes according to the EFQM standards.

Leaders and management of these ministries have to focus seriously on these weaknesses and deploy strategies to eliminate these weaknesses, to improve and enhance each dimension in order to build a strong foundation for TQM implementation leading to a successful implementation of current and future excellence programs.

In view of the findings of this research and in order to have a successful TQM implementation in the federal government in line with the international standards and continuous improvement towards excellence, the following recommendations are made:

1. To administer EFQM self assessment in the three ministries or in any other government agency on a periodical basis, especially before decision are made to embark on a TQM implementation plan
2. To communicate the results of the assessment to all leaders in the ministry to rectify weaknesses and enhance strengths
3. To use the result of initial assessments, similar to the work done in this research, as a baseline for further benchmarking studies to assess improvements made. Ministries willing to embark on a TQM implementation could benefit from the following plan before implementation starts:

a. Administer TQM assessment

b. Analyze the results to assess weaknesses and strengths

c. Provide a training course in TQM for all the leaders in the ministry

d. Select a group of leaders and train them to train other staff about the TQM culture change. The training must be extensive and should be provided for at least two months. The staff training has to go in parallel with leaders' training

e. Perform excellence assessment once again to get the ministry's perception on excellence after completing the leaders' training

f. Communicate the results to all leaders and be ready to propose solutions and design programs

g. Leaders should formulate sound strategy of TQM implementation in the ministry. The strategy should include a plan of implementation and a breakdown of programs at different levels of the ministry

h. Communicate the strategy to all the staff in the ministry

i. Form a team for TQM implementation. The team has to be well trained for driving the implementation process successfully at the ministry

j. Create a TQM division at a later stage to be responsible for TQM implementation and development

k. Form a TQM board of directors comprising the top leaders in the ministry to follow-up and monitors the TQM process at all stages

l. Place the PDCA system properly, and apply it consistently in the ministry

The proposed plan requires a time span of three years and a half to implement, and is expected to raise the level of performance of the ministry to an acceptable level of excellence. A detailed implementation process of each criterion has to be formulated. However, this plan has to be revised by the ministry's TQM board of directors periodically in line with the results of the periodic assessment. Furthermore, the period of implementation in this plan may vary depending on the resources available at the ministry or the structure of the ministry.

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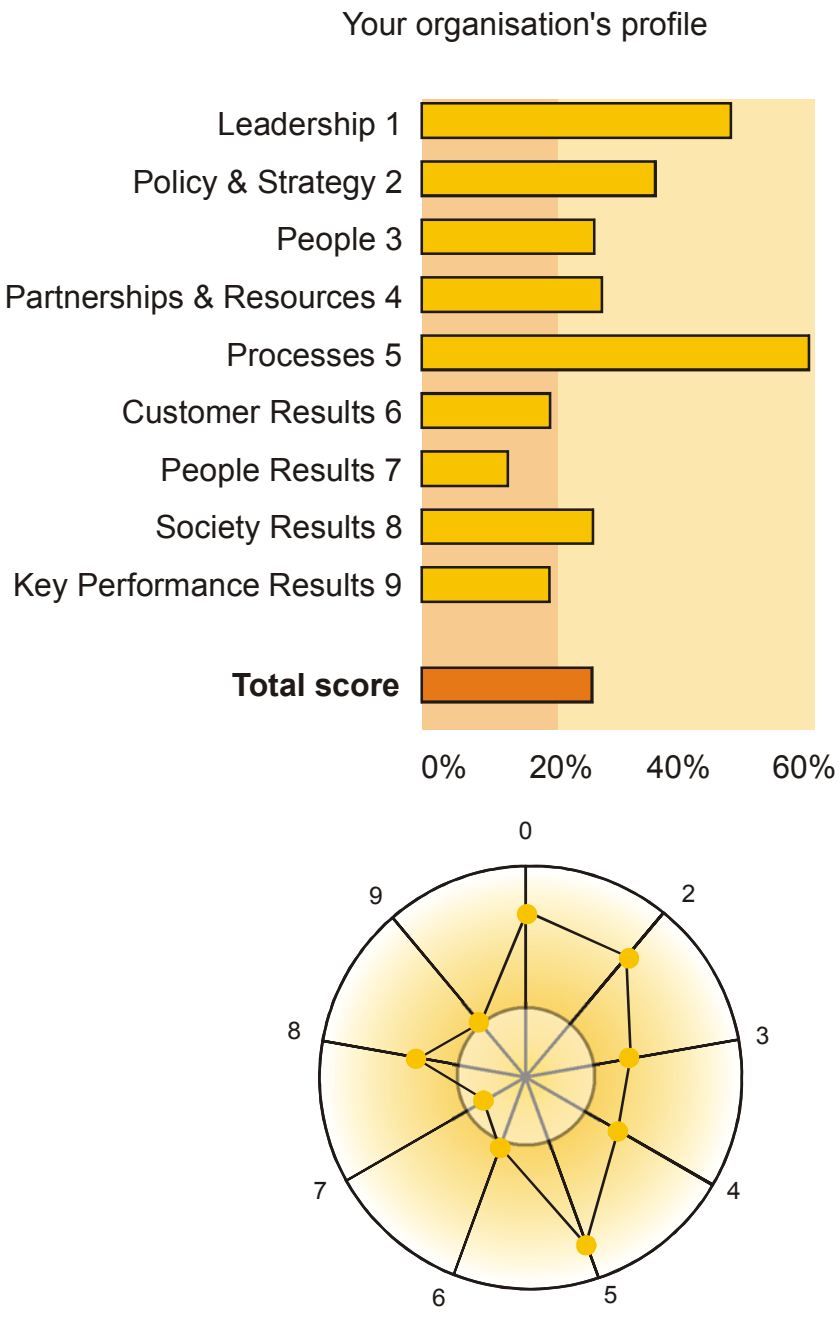
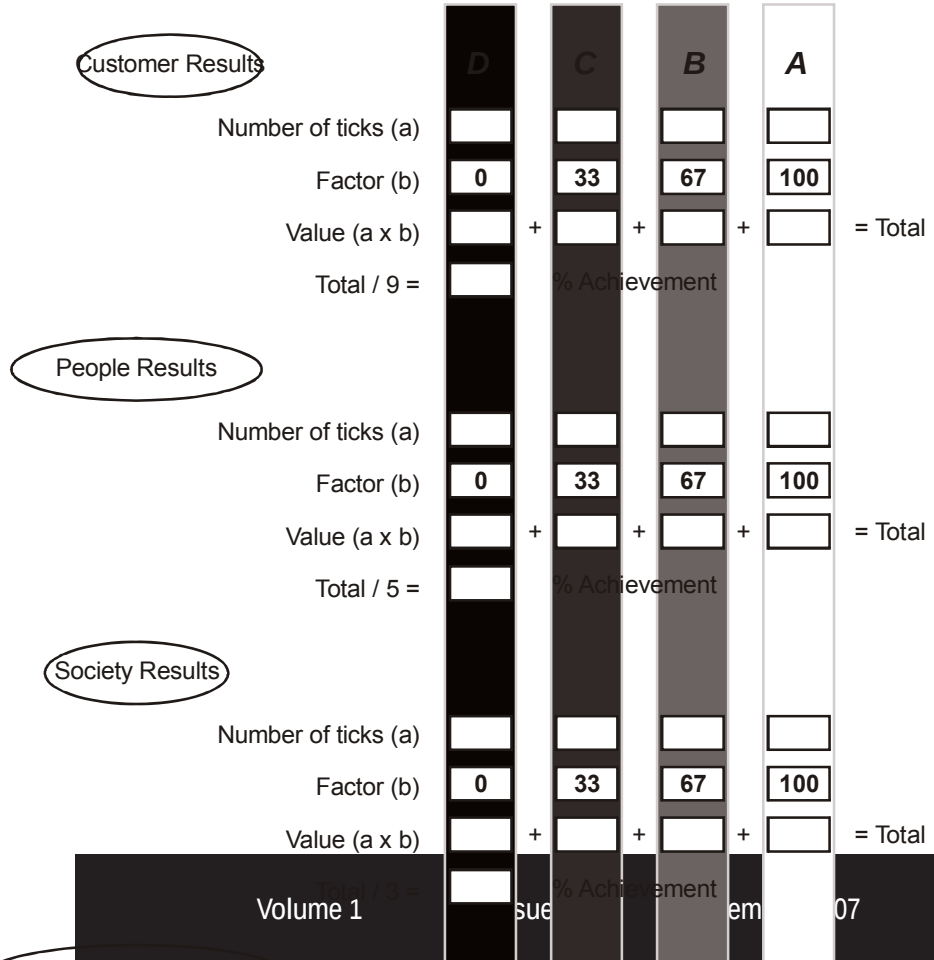
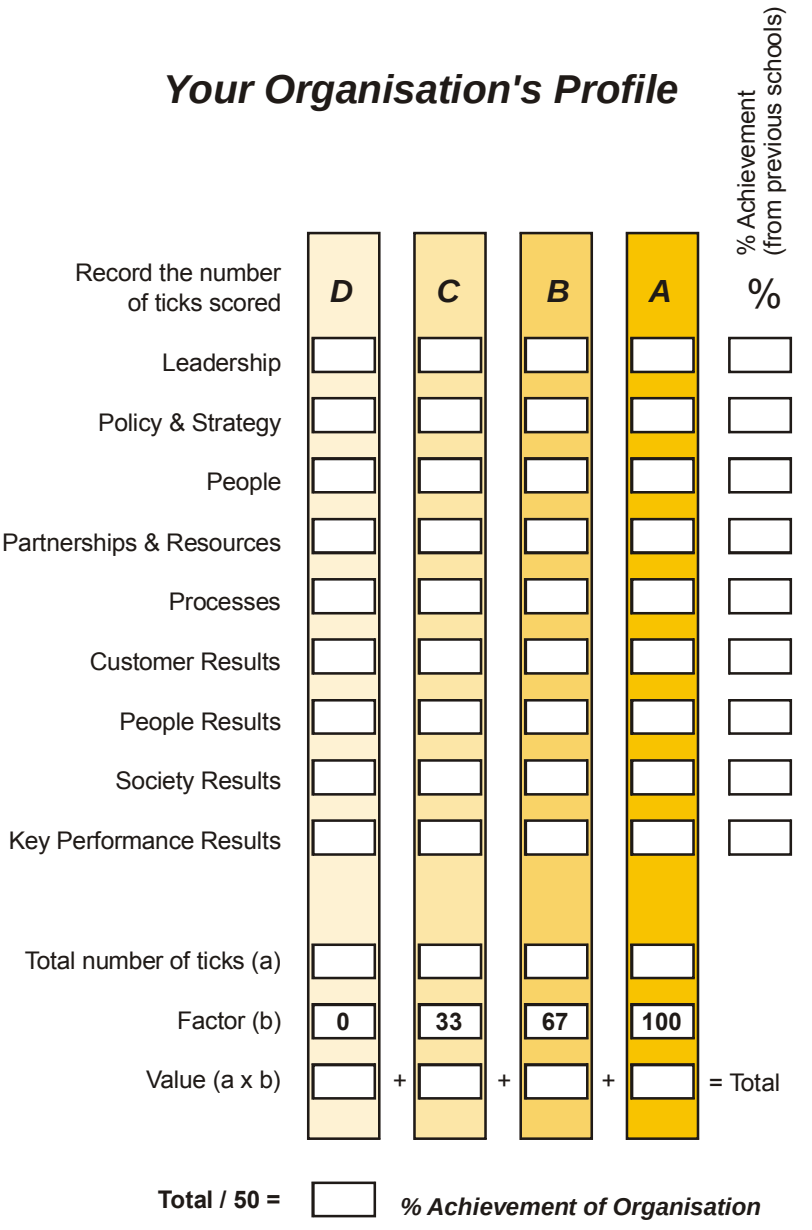
Appendix I


Your organisation's profile
Leadership 1
Policy & Strategy 2
People 3
Partnerships & Resources 4
Processes 5
Customer Results 6
People Results 7
Society Results 8
Key Performance Results 9
Total score
0%
20%
40%
60%
0
2
3
4
5
6
7
8
9


Customer Results
D
C
B
A
Number of ticks (a)
Factor (b)
0
33
67
100
Value (a x b)
+
+
+
= Total
Total / 9 =
% Achievement
People Results
Number of ticks (a)
Factor (b)
0
33
67
100
Value (a x b)
+
+
+
= Total
Total / 5 =
% Achievement
Society Results
Number of ticks (a)
Factor (b)
0
33
67
100
Value (a x b)
+
+
+
= Total
Total / 3 =
% Achievement

Your Organisation's Profile



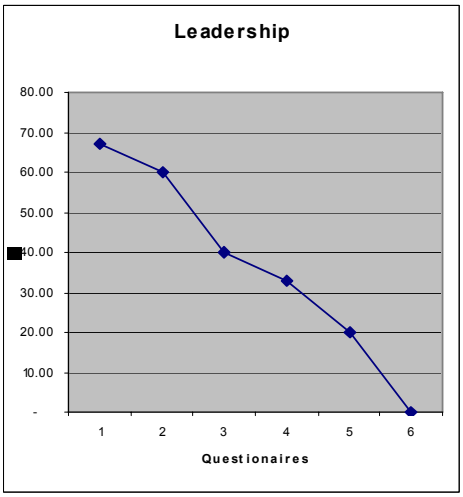
Appendix II

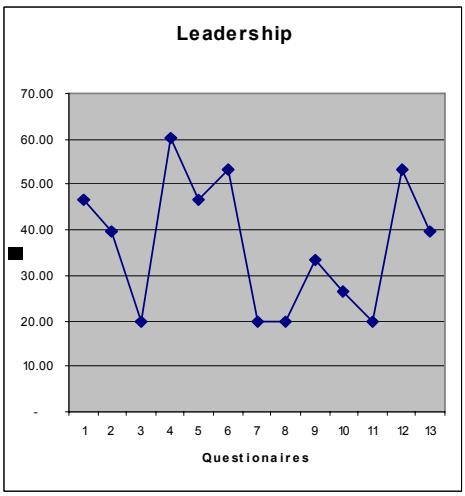
MOEW, MOFI, and MOPW Leaders

Perception

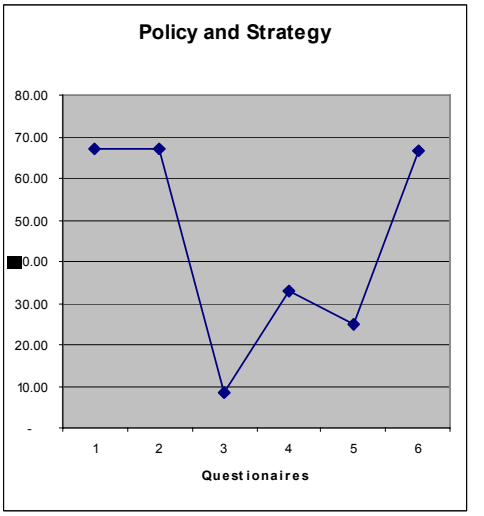
The following graphs showing the ministry perceptions in the category of leaders compared with other ministry(MOEW,MOFI and MOPW respectively).

Leadership






Policy and Strategy
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


Policy and Strategy
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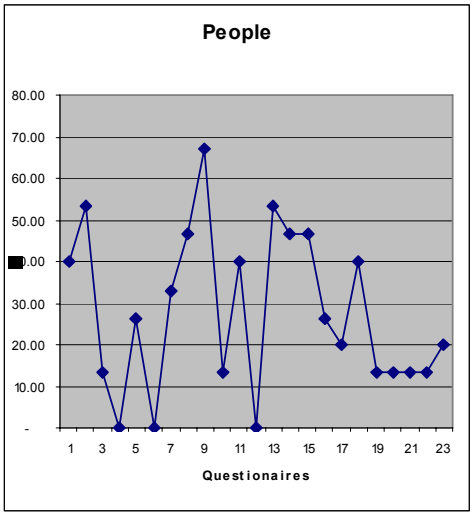
40.00
30.00
20.00
10.00
-
1 2 3 4 5 6
Questionaires


Policy and Strategy
60.00
50.00
40.00
30.00
20.00
10.00
-
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires

People


People
80.00
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60.00
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30.00
20.00
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-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


People
120.00
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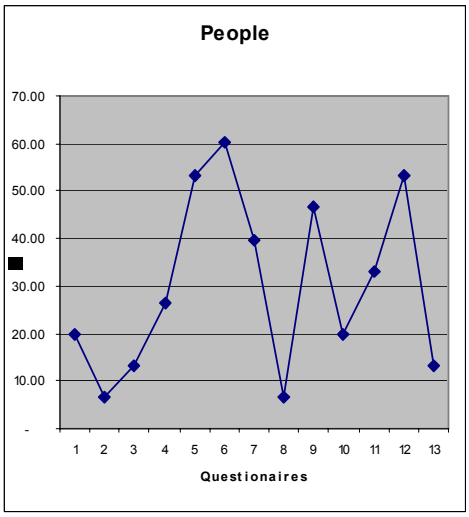
80.00
40.00
20.00
-
1 2 3 4 5 6
Questionaires


People
70.00
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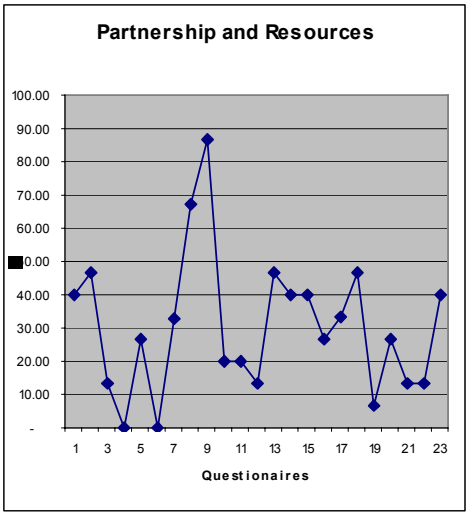
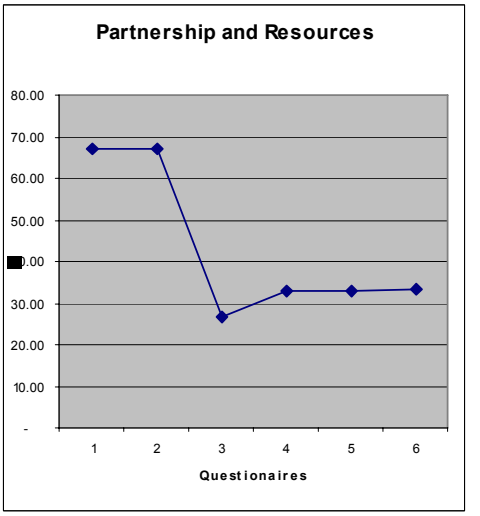
-
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires


Partnership and Resources
100.00
90.00
80.00
70.00
60.00
40.00
30.00
20.00
10.00
-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


Partnership and Resources
80.00
70.00
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30.00
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10.00
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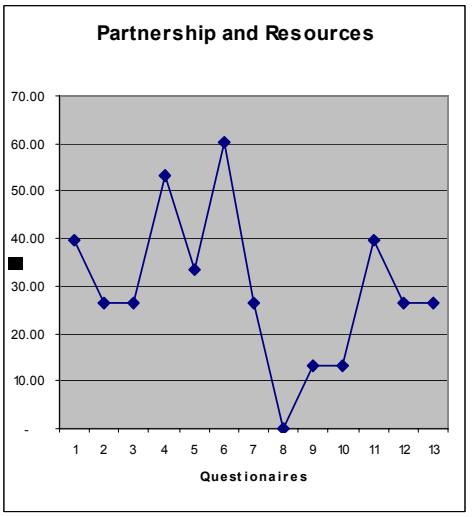
1 2 3 4 5 6
Questionaires


Partnership and Resources
70.00
60.00
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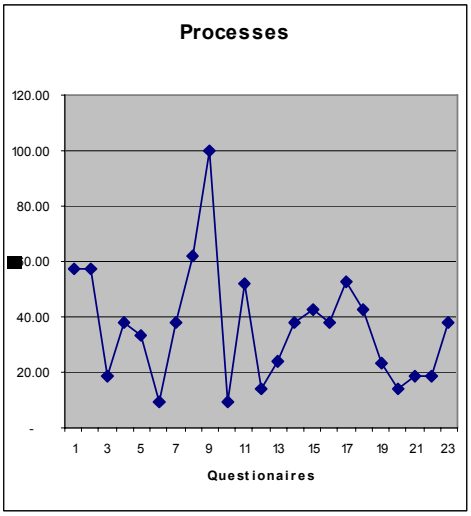
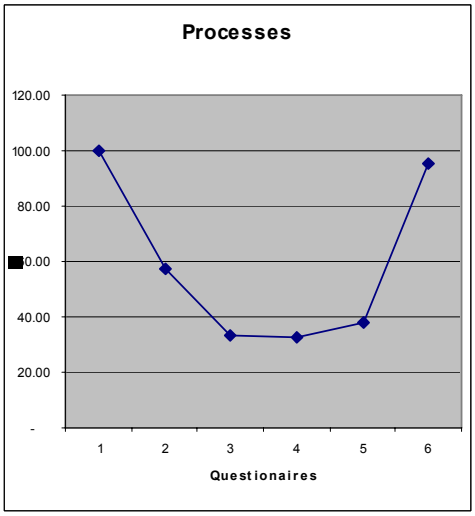
-
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires


Processes
120.00
100.00
80.00
60.00
40.00
20.00
-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


Processes
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100.00
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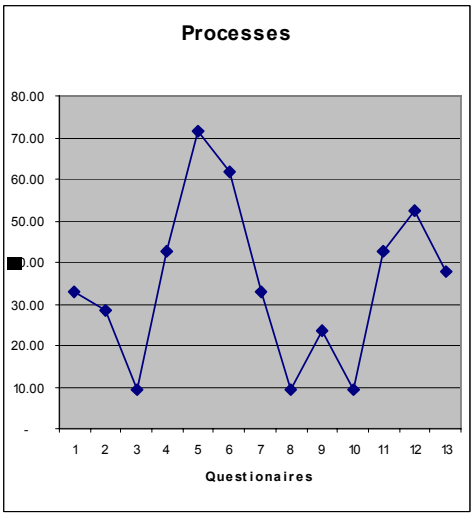
60.00
40.00
20.00
-
1 2 3 4 5 6
Questionaires


Processes
80.00
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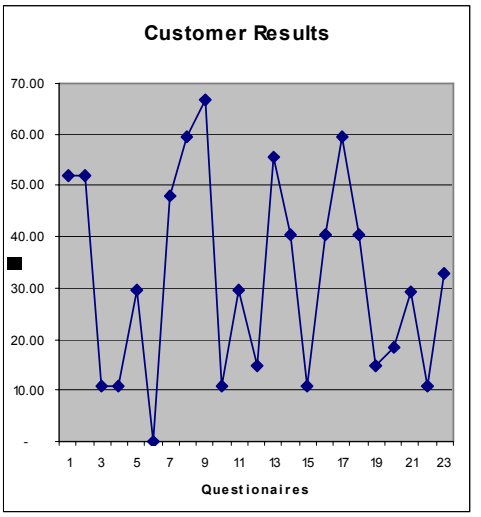
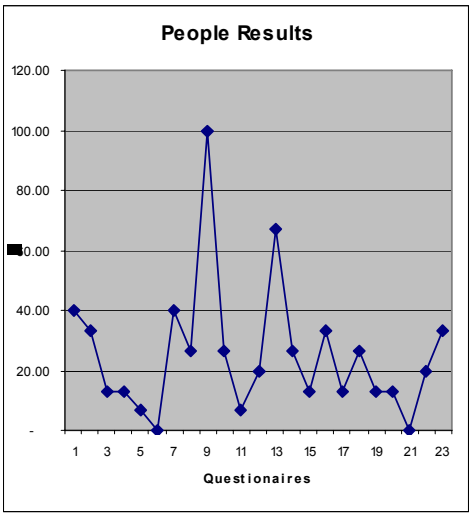
50.00
40.00
30.00
20.00
10.00
-
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires

Customer Resuots




People Results
120.00
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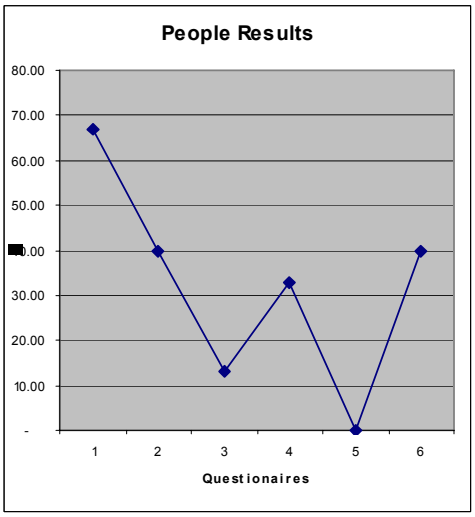
40.00
20.00
-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


People Results
80.00
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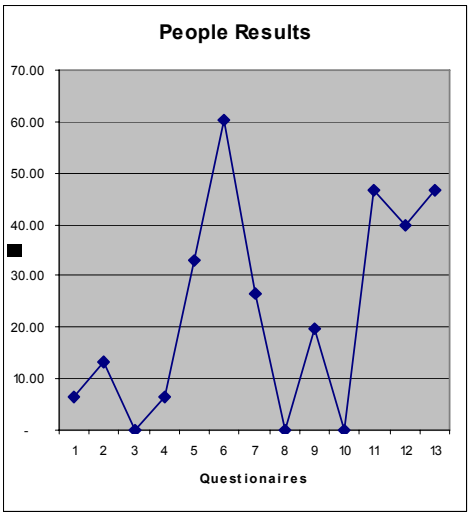
1 2 3 4 5 6
Questionaires


People Results
70.00
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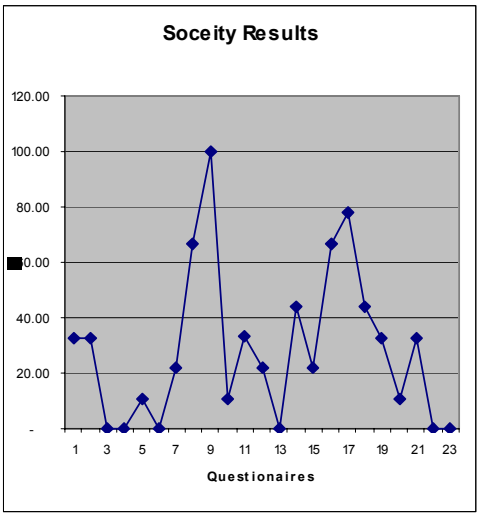
30.00
20.00
10.00
-
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires


Soceity Results
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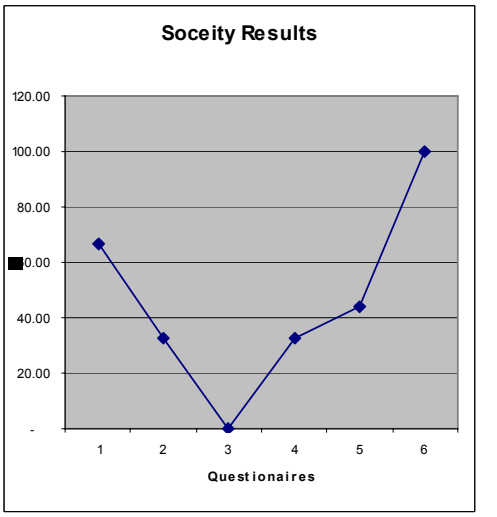
-
1 3 5 7 9 11 13 15 17 19 21 23
Questionaires


Soceity Results
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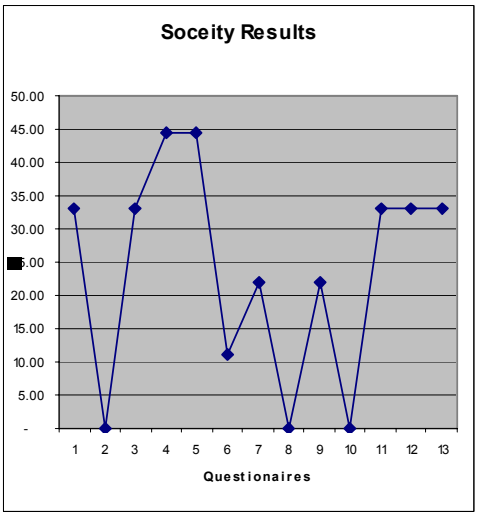
1 2 3 4 5 6
Questionaires


Soceity Results
50.00
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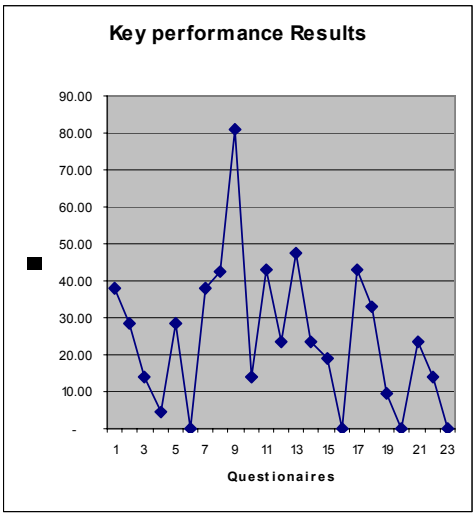
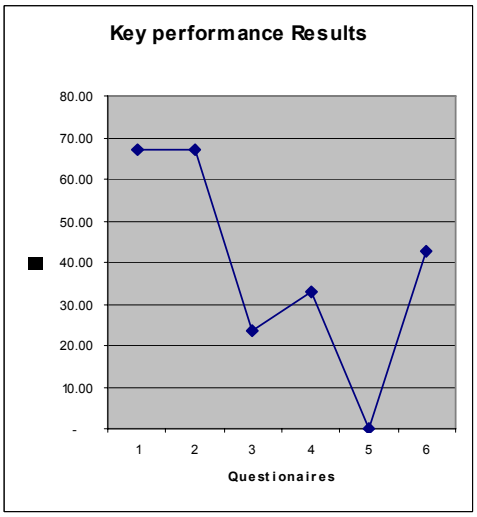
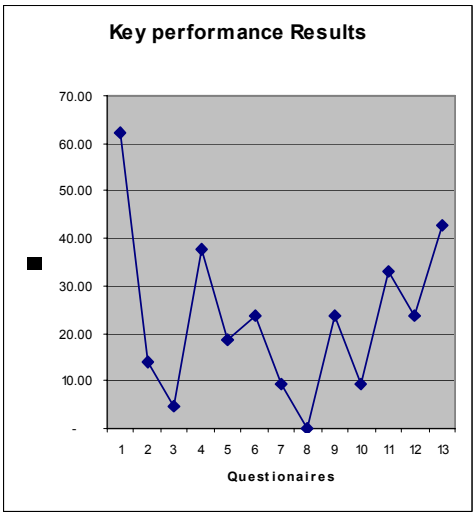
1 2 3 4 5 6 7 8 9 10 11 12 13
Questionaires







The following tables and graphs shows the MOEW Categories (Leaders, Employees, and MOEW overall) profiles of perception

Summary result of MOEW Perceptions on the TQM Readiness

	1. Leadership	2. Policy & Strategy	3. People	4. Partnership & Resource	5. Processes	6. Customer Results	7. People Results	8. Society Results	9. Key performance Results	Total Score
MOEW	41.66	36.84	33.82	31.96	40.58	31.96	28.05	29.33	25.33	33.29
Leaders	37.88	32.49	27.74	30.32	36.56	32.11	25.35	28.91	24.74	30.82
Employees	44.15	39.69	37.82	33.03	43.22	31.96	29.83.	28.87	26.71	34.92