

## Investigating the Applicability of EFQM and KAIIAE in Jordanian Healthcare Organizations: A Case Study

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### Abstract:

This research is set out to analyze the applicability of KAIIAE and EFQM in the Jordanian healthcare organizations. Until 2011, only four Jordanian hospitals applied for the award and only one hospital won it. We chose an elite private Jordanian hospital as a candidate for this research and trained some of its employees on the award's requirements. We then translated the requirements of the award to Arabic and tabulated them into simple Excel sheets. Self-assessment was performed on the entire hospital and the result was a score of 32 out of 100. The score, while seems to be low, is actually high for an organization never considered the award before. The research team put together an action plan that raised the score to 45 or 50 within one year, which is a great score, compared with elite healthcare organizations world wide. This research proves that when simplifying the EFQM requirements and training the hospital personnel, excellence models become very applicable in Jordanian hospitals.

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### 1. Introduction

Healthcare organizations worldwide utilize many accreditation systems and excellence models to help achieve high levels of effectiveness and efficiency in their operations. The European Foundation for Quality Management (EFQM) is one example of an excellence model used primarily in all European countries. Many other countries use EFQM in its original format or have its own national version of it. In Jordan, the requirements for King Abdullah II Award for Excellence (KAIIAE), that is applied to private sectors, is identical to that of EFQM. Thus, we will use the terms EFQM and KAIIAE in this report interchangeably.

Numerous European healthcare organizations utilize the EFQM excellence model. In some countries, it is required by law [1]. In Jordan, however, the story is different; KAIIAE receives only 50-60 applications per year from private Jordanian organizations, of which only 2 or 3 are hospitals. In total, only four Jordanian hospitals have applied for the award so far, and one hospital only received the award.

Excellence models initially targeted the manufacturing sector, but slowly found their way to service sectors including healthcare [2]. KAIIAE is not popular for

Jordanian hospitals, as managers find it unimportant since it is not tailored for healthcare. Moreover, EFQM is very generic and does not specifically cover clinical aspects of healthcare institutions [3]. Therefore, Jordanian hospitals focus more on gaining local accreditation from the Healthcare Accreditation Council (HCAC), or international accreditation such that provided by the Joint Commission international (JCI).

In this research, we investigate some reasons behind the lack of applications of EFQM in Jordanian Healthcare organizations, and then we take all the steps necessary for applying it to an elite Jordanian hospital.

#### 1.1. Structure of EFQM Excellence Model

EFQM is a non-profit membership based organization founded in 1988 with the endorsement of the European Commission. The present membership is in excess of 800 European organizations inclusive of healthcare.

EFQM has developed an evaluation approach, termed "Excellence Model" that is implemented via self-assessment. This Excellence Model (2010 version) is made up of 3 parts; The 9 Box Model (Figure 1), The 8 Fundamental Concepts of Excellence, and the RADAR (Figure 2).

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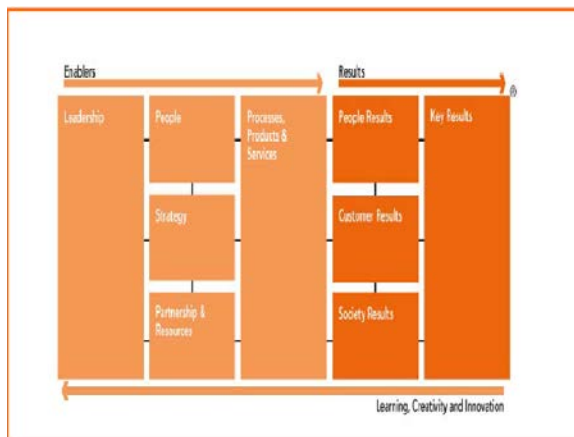


Figure 1. The 9 Box Model

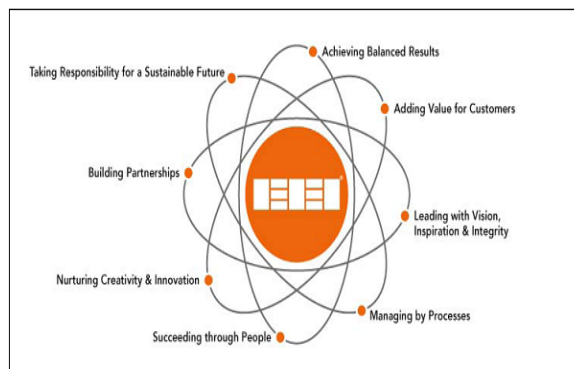


Figure 2. The 8 Fundamental Concepts of Excellence

The 9 Box Model reveals nine criteria classified into two groups: Enablers and Results. Each criterion is divided into few sub criteria, and the final score in a self-assessment is calculated based on the scores of all criteria as shown in Table 1. KAIIE uses the same scoring scheme [4] but each criterion score is divided by 10, which makes the highest possible score in KAIIE 100 instead of 1000.

Table 1. Maximum scores of the 9 criteria

Criteria	Maximum Score
Leadership	10
Strategy	10
People	10
Partnership & Resources	10
Process, Product & services	10
Customer Results	15
People Results	10
Society Results	10
Key Results	15

The fundamental concepts of excellence are basic concepts any institution should develop before applying for the award. They are considered the underlying principles of the EFQM excellence model. These concepts are used to make initial self-assessment to judge the readiness level of the organization to apply for the award.

The RADAR is a measurement tool used to assess and score during the assessment process. It is based on a cycle

of continuous learning and improvement and consists of four elements [5]: Results, Approach, Deployment and Assessment & Review. The application of RADAR logic helps organizations identify, prioritize, plan and implement improvements where needed.

The RADAR logic is considered complex by many assessors. If we add this to the fact that it has to be applied to high number of sub criteria, we will realize how tedious and difficult it is to perform a self-assessment [6].

### 1.2. King Abdullah II Award for Excellence (KAIIE)

KAIIE is the highest level of recognition of quality in Jordan. It was created to enhance the competitiveness level of Jordanian businesses by promoting quality awareness and performance excellence, recognizing quality and business achievements of Jordanian organizations, and publicizing these organizations' successful performance strategies. The award has shown great success in many organizations that applied for it [7].

For the private sectors, KAIIE uses the exact criteria and sub criteria detailed in the EFQM model. The only difference is the scoring as mentioned in section 1.1.

### 1.3. Success Drivers and Challenges of Applying for EFQM

EFQM is successful in certain areas where it empowers leaders, increases satisfaction and loyalty of customers, reaches a common sense of purpose throughout the organization, sustains a constant and well managed change, allows employees and stakeholders to be engaged and motivated, establishes an upward flow of ideas and an efficient and effective use of data and operations and lastly produces excellent results, including good financial performance [7].

Most organizations use excellence models as a continuous improvement tool; Goldstein and Schweikhart made that conclusion as a result of studying performance of 220 US hospitals [8]. Other reports also agree with that, especially those studying hospitals in the Basque area (Spain) [9] and in the UK using EFQM [10].

Pakistani healthcare organizations, using excellence models, seem to have higher quality services and enjoy better quality practices [11]. Similarly, in India, many healthcare organizations illustrate successful implementation of various excellence models [12].

EFQM helps Spanish healthcare organizations to create a continuous improvement culture that benefits patients [13]. The article also reveals benefits for staff and key stakeholders. Similar findings are reported in Italy [14].

In Holland, organizations benefit from EFQM by applying it through training and self-assessment before running for the Dutch quality award program. Healthcare organizations, applying this two-step approach, seem to win the Dutch award for Quality in an average of two years [1], which is an indication of successful implementation.

In Germany, healthcare organizations that apply EFQM see noticeable quality improvements [3]. The article, however, highlights some weak aspects of EFQM, such as the general and non-specific nature of the model that does not cover all areas relevant to healthcare. Gómez *et al.* agree with this conclusion and state that EFQM works better in manufacturing

companies than in service organizations such as healthcare [15].

Studying the application of various quality methods including excellence models one may conclude that regardless of the method used, quality success is more related to internal factors than the nature of that method [16]. Similarly, Leggat *et al.* declared that prior to using any such models, healthcare organizations should first focus on enhancing employee skills [17]. As a result, we conclude that excellence models are great tools, but many factors may hinder its application.

In Jordan, The only hospital that won the award is the Specialty Hospital. According to the hospital management, what helped the hospital winning the award is the fact that they were already accredited by HCAC and JCI and received multiple ISO awards before applying for the KAIIE. Most of the documentation required by the award was already enlisted in the policies and practices manuals. Leadership commitment and encouragement of the Specialty Hospital was also an important factor in winning the award.

The hospital faced many challenges, including employees' lack of interest and awareness of the award, the common resistance against learning a new system and due to the employees' current culture which lacked commitment and enthusiasm. The hospital's management revealed, however, that after winning the award such culture gradually improved and employees became more familiar with the terms quality and excellence.

## 2. Methodology

The methodology used in this research tries to achieve the highest level of success in applying EFQM in a Jordanian healthcare organization, and since very few healthcare institutions applied for it, we found that many preparatory steps had to be performed. The following describes detailed steps of our methodology:

1. Educating the research team on the state of EFQM applicability in Jordanian healthcare organizations. This was achieved by holding many interviews with representatives from the Ministry of Health, King Abdullah II center for excellence, and the only hospital that won the KAIIE in Jordan: Specialty Hospital.
2. Hospital selection: To ensure the highest level of success, we selected a hospital that cares for its performance quality, accredited locally and internationally, yet never attempted to apply for the award.
3. Overcoming the complex nature of EFQM requirements and RADAR scoring scheme: This was a key step to the success of this project. Two major tasks were performed:
  - 3.1. A two-week training program was performed for key employees in the candidate hospital on all details of the award. These trainees were vital for achieving next steps.
  - 3.2. The complex details of the model were translated into an easy-to-use Excel sheet. The sheet was in Arabic language. Each tab in the sheet represents a criterion. The complex RADAR scoring scheme was calculated by Excel without human interference. Figure 3 represents an example of the Excel sheet.

Leadership Criterion							
Sub Criteria							
(1.1) Leaders develop the mission, vision, values and ethics and are role models (20 points)							
Number	Guidance Points	Approach	Deployment	Assessment and Review	Subtotal	Points	Evidence
1/1/1	Leaders establish clear strategic guide lines and unite their employees toward achieving the goals and mission of the organization	50%	100%	0%	50%	1.667	Meeting Minutes
2/1/1	Leaders ensure the future of the institution by defining and delivering the main goal of the existence of the institution which form the basis for the vision, values and work ethics of the organization.	75%	100%	0%	58%	1.934	Orientation process for new employees
3/1/1	Demonstrate a commitment to corporate values and providing a good example of respect, social responsibility, ethical behavior, both internal and external to the organization.	0.00%	0.00%	0.00%	0.00%	0.000	
4/1/1	Support institutional development through shared values, accountability, ethics and culture of the organization, and the culture of trust and openness.	0.00%	0.00%	0.00%	0.00%	0.000	
5/1/1	Ensure staff treated with respect and embrace the highest standards of ethical behavior.	0.00%	0.00%	0.00%	0.00%	0.000	
6/1/1	Creating a culture of shared leadership of the institution, review and develop effective leadership behaviors of individuals	0.00%	0.00%	0.00%	0.00%	0.000	
<b>Total points for Sub criteria</b>		<b>21%</b>	<b>33%</b>	<b>0%</b>	<b>18%</b>	<b>3.61</b>	

Figure 3. Example on the leadership criterion.

The translated Excel sheet is the main stone of this project. The translation minimized the complexity level of the model. The translated sheet was prepared in full agreement with the original EFQM model. Every detail was translated and the score was calculated by using the equations built in Excel.

1. Performing initial assessment of the hospital's performance: In order to judge the readiness of the hospital to apply EFQM, an initial assessment is performed. This assessment is not based on evidence. Rather, it is based on managerial judgment of the level of commitment to the 8 principles of excellence. The hospital needs to score above 25% in this assessment in order to apply for the award. Otherwise, the hospital will be requested to do more basic work in order to bring its score up.
2. Performing a full self-assessment using the Excel sheet produced earlier: This was performed in an accurate method following the exact requirement of EFQM. The score of such assessment represents the level of excellence of the hospital performance.
3. Revealing areas of needed improvements and prioritizing them: the previous step revealed the score in each of the main criteria and sub criteria. Any score, less than a full mark, represents an area of improvement. These areas are prioritized based on their effect on the final score.
4. Designing an action plan to minimize or eliminate performance gaps.
5. Making final recommendations and conclusions for management team.

### 3. Case Study

The research team spent eight months implementing the prescribed methodology steps. Meeting with representatives from the Ministry of Health and King Abdullah II center of excellence revealed a bleak picture about the applicability of EFQM in Jordanian healthcare organizations. On the other hand, the case of Specialty Hospital represented a success story, largely due to the strong quality inclination of its upper management. Therefore, the team took cautious steps in preparing and encouraging top management of the selected hospital.

Preparation of the Excel sheet was done with two goals in mind: ease of use and automated calculations. This decreased the fear out of the possible users. The sheet was filled in based on data and evidence gathered from all the departments of the hospital. It evaluated strengths and weaknesses (areas for improvement) for each criterion and tabulated as shown in Figure 4.

Strength areas and areas of improvement related to Leadership criterion	
Strength areas	Areas of improvement

Figure 4. Strengths and areas of improvement for each criterion

## 4. Results and Discussion

### 4.1. Initial Assessment

This assessment was based on the 8 principles of excellence. The score of the initial assessment was 27/80. This score is above 25%, which is a sufficient indication that the hospital is ready to move to the next step; self-assessment.

### 4.2. Self-Assessment Scoring

The 9 criteria were analyzed as prescribed by EFQM requirements. For example, the leadership criterion is divided into 5 sub criteria and each sub criterion is divided into a number of activities; let's take the first sub criterion (leaders develop the mission, vision and values and effect and act as role models) as an example. From figure 3, we notice that this sub criterion is divided into 6 activities. Each activity is scored based on 3 scoring tools (Approach, Deployment and Assessment & Refinement) according to the scoring guidelines.

The scoring results of the first activity (set and communicate clear direction and strategic focus; they unite their people in sharing and achieving the organization's core purpose and objectives) are as follows:

1. For the approach, the score is 50% based on the scoring guidelines.
2. For deployment, the score is 100% since the hospital presented comprehensive evidence.
3. For assessment & refinement, the score is 0% since the hospital presented no evidence.

The overall score for this activity is 50% out of the activity overall score or 1.667/3.33.

All other criteria were scored in similar fashion. The overall grade of this self-assessment is 32.4/100. The detailed scores are shown in Table 2 in an ascending manner.

A score of 32.4 out of 100 may seem low, but in fact it is a considerably good score for a hospital in its first self-assessment. To put matters in perspective, most German hospitals score in the mid 20's and some elite German hospitals may score the mid 40's [1].

### 4.3. Radar Analysis

Figure 5 shows a graphical representation of the criteria's scores; it shows that society results and leadership criteria have the lowest scores; therefore, more attention was paid to these two criteria in order to increase their score.



Figure 5. Radar Analysis

#### 4.4. Cause and Effect

A brain-storming activity and a cause-and-effect diagram were performed to reveal causes of low performance. Figure 6 shows the resulting cause and effect diagram. The figure identifies problems with the overall performance of the hospital. As we can see, the major fish bones that are causing a severe reduction in the hospital performance are: Management, Patients, Strategy and Employees. Finance and Business are two other bones that were considered.

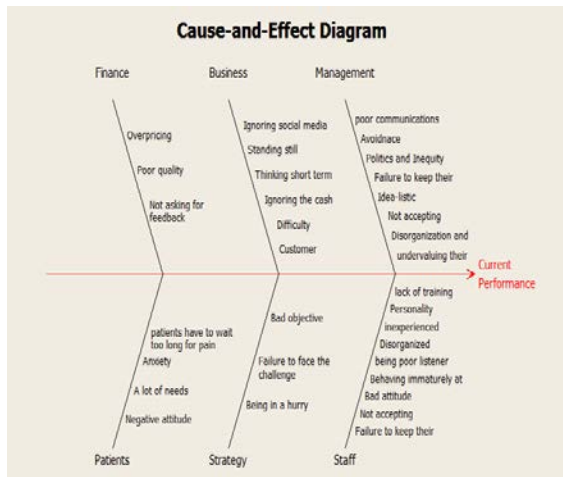


Figure 6. Cause and effect diagram

#### 4.5. Pareto analysis

For all criteria and sub criteria, Pareto chart was conducted to illustrate the gap of the sub criterion to reach the maximum score. Figure 7 shows Pareto chart for leadership. Each column represents the gap of the sub criterion to reach the maximum score. From the chart we conclude that the fifth sub criterion (leaders ensure that the organization is flexible and managers change effectively), the fourth sub criterion (leaders reinforce a culture of excellence with the organization's people) and the first sub criterion (leaders develop the mission, vision, values and ethics and act as role models) are responsible for 80% of the gap. In order to enhance the leadership score, more efforts must be focused on these sub criteria.

Pareto analysis was used for all criteria and was used to prioritize action on these criteria to get the most benefits.

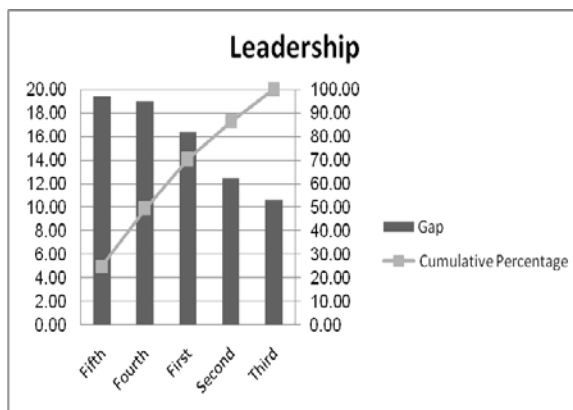


Figure 7. Pareto Analysis for the leadership criterion

#### 4.6. Suggested initiatives

The compiled RADAR analysis, cause and effect diagrams and Pareto analysis for all criteria produced a long list of actions to be performed in order to reach a state of excellence. After meeting with management the team prioritized these actions based on effect and speed of implementation. The team was able to build an action plan that can be implemented within one year and raise the score from 32 to a minimum of 45. In other words, this hospital can join the elite and strongly compete to win the KAIIE within a year time. As an example, let's see some suggested initiatives for the leadership criterion:

1. Managers should create the mission, vision and the strategic values of the hospital required for the long term success and implement these values via appropriate actions and behaviors. They are recommended to be personally involved in ensuring that the *hospital's management system* is created and implemented. (sub criterion 1.1)
2. Management should develop an internal culture of excellence in the hospital and they should personally get involved in ensuring that the *organization's management system* is created, implemented and continuously improved. (sub criterion 1.4)
3. Managers should be more involved through holding monthly meetings for all employees in order to let them express their suggestions and choose the best proposals. (sub criterion 1.5)
4. Managers must use effective communication skills to interact with their customers and external experts at all levels. A process should be established to ensure such activities. (sub criterion 1.5)
5. Managers must act with Integrity and transparency by insuring equal opportunities to all employees and by motivating them to express their innovative ideas and suggestions. A process should be established to ensure such activities. (sub criterion 1.4)

If the suggested improvement initiatives for the leadership criterion are executed, and proven with evidence, the sub criteria score would change as follows:

- The score for sub criterion 1.1 will increase by 2 points.
- The score for sub criterion 1.4 will increase by 4 points.
- The score for sub criterion 1.5 will increase by 6 points.

This will increase the total score by 1.2 points. In similar fashion initiatives for all other criteria were created.

##### 4.6.1. Initiative Scheduling

For each initiative, a schedule (time-line) was created. All schedules were planned to be finished within one year. These action plans represent the starting point of the journey for excellence. Figure 8 shows a Gantt chart, an example for the third leadership suggested initiative. The number of initiatives was high, but the team felt that the initiatives are achievable since the work load is distributed to all departments and personnel of the hospital.



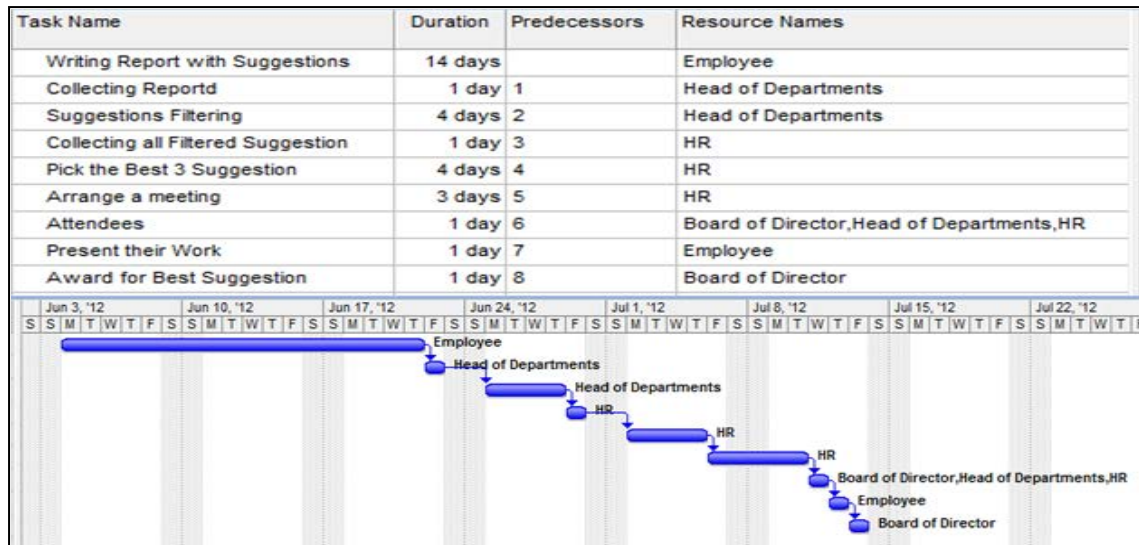


Figure 8. Gantt chart for the leadership criterion

## 6. Conclusions and Future Work

This research was set out to study the applicability of excellence models in the Jordanian healthcare sector. Working with an elite Jordanian hospital revealed that the upper management had their heart in the right place considering the quality of their services; however, they lacked a rigorous approach to their policies and standards. Most of the actions tackled by different departments are not documented or addressed properly. This affected the hospital's score badly even though it is a simple issue to fix.

After applying the self-assessment tool in many departments, the total score was 32.4/100 which is a good score considering there is no approach in most of the policies set in the hospital. Note that very few hospitals in Europe score up to 750 out of 1000. Therefore, when the proposed initiatives are implemented and yet more work is done by the hospital, it will be able within few years to compete internationally with the finest hospitals in Europe.

The fact that the candidate hospital is already accredited, both locally and internationally, helped in preparing the overall strategy plan of the hospital. This clearly shows that accreditations are in fact the starting steps in the process to reach excellence in hospitals.

The training activity and the creation of the Excel sheet were two key reasons for the success seen in this project. Performing these two tasks took the fear out of quality employees at the hospital. It also simplified the complex requirements of EFQM.

After various visits to the hospital, meetings with the upper management and different department heads and analysis of the current state of the hospital according to the KAIIE standards, we concluded that KAIIE and EFQM are very applicable at Jordanian hospitals. There is no dispute that both excellence models are not in fact tailored for healthcare services; however, they offer a valuable help in creating a continuously improved culture, where a work environment in which employees are able to use their skills is being built, an increase in awareness of quality and excellence and effective communications are seen. This will lead to better processes, resulting in better

service thus higher customer satisfaction and eventually greater revenues.

The main conclusion that is drawn by this study is that EFQM and KAIIE may be applied and won by Jordanian healthcare organizations with the help of proper training and simplification of the award's requirements. Another important conclusion is that EFQM and KAIIE award are used as assessment tools but they do not guarantee excellence. They just reveal performance gaps.

Future work may focus on similar cases to further discuss the applicability of such models. It can also reveal challenges not seen in this research. One area that can extend this research contribution is creating easy-to-use software based on the Excel sheet created in this research. People tend to interact better with a software package than an Excel sheet. User-friendly software, in Arabic, may make excellence models more popular in Jordan and the region.

## References

- [1] U. Nabitz, N. Klazinga, J. Walburg, "The EFQM excellence model: European and Dutch experience with the EFQM approach in health care". *International Journal for Quality in Health Care*, Vol. 12, No. 3, 2000, 191-202.
- [2] J.G. Badia, G.J. Solà, E.P. Rodríguez, J. C. Segura, C.M. Molins, "The EFQM excellence model is useful for primary health care teams". *Family Practice*, Vol.18, No. 4, 2001, 407-409.
- [3] J. Moeller, "The EFQM Excellence Model. German experience with the EFQM approach in health care". *International Journal for Quality in Health Care*, Vol. 13, No. 1, 2001, 45-49.
- [4] Z. Abu-Hamatte, T. Al-Azab, M. El-Amyan, "Total quality management achievement: King Abdullah II Award for Excellence of Jordan as a model". *Technovation*, Vol. 23, No. 1, 2003, 649-652.
- [5] J. Moeller, A.K. Sonntag, "Evaluation of health services organizations—German experiences with the EFQM excellence approach in healthcare". *The TQM Magazine*, Vol. 13, No. 5, 2007, 361-367.

- [6] I.A. Rawabdeh, "Jordan Quality Award (King Abdullah II Award for Excellence (KAIIE)): Characteristics, assessment and benchmarking". *Benchmarking: An International Journal*, Vol. 15, No. 1, 2008, 4–24.
- [7] A. Al-Refaie, O. Ghnaimat, M.H. Li, "Effects of ISO 9001 Certification and KAAE on Performance of Jordanian Firms". *Jordan Journal of Mechanical and Industrial Engineering*, Vol. 6, No. 1, 2012, 45-53.
- [8] S.M. Goldstein, S.B. Schweikhart, "Empirical Support for the Baldrige Award Framework in U.S. Hospitals". *Health Care Management Review*, Vol. 27, No. 1, 2002, 62-75.
- [9] A. Arcelay, E. Sánchez, L. Hernández, G. Inclán, M. Bacigalupe, J. Letona, R.M. González, A.E. Martínez-Conde, "Self-assessment of all the health centres of a public health service through the European Model of Total Quality Management". *International Journal of Health Care Quality Assurance*, Vol. 12, No. 2, 1999, 54–59.
- [10] G. Naylor, "Using the Business Excellence Model to develop a strategy for a healthcare organization". *International Journal of Health Care Quality Assurance*, Vol. 12, No. 2, 1999, 37–45.
- [11] F. Vakani, Z. Fatmi, K. Naqvi, "Three-level quality assessment of a dental hospital using EFQM". *International Journal of Health Care Quality Assurance*, Vol. 24, No. 8, 2011, 582–591.
- [12] M. Palani, N. Raja, S.G. Deshmukh, S. Wadhwa, "Quality award dimensions: a strategic instrument for measuring health service quality". *International Journal of Health Care Quality Assurance*, Vol. 20, No. 5, 2007, 363–378.
- [13] S. Jackson, R. Bircher, "Transforming a run down general practice into a leading edge primary care organization with the help of the EFQM excellence model". *International Journal of Health Care Quality Assurance*, Vol. 15, No. 6, 2002, 255–267.
- [14] S. Venero, U. Nabitiz, G. Bragonzi, A. Rebelli, R. Molinari, "A two-level EFQM self-assessment in an Italian hospital". *International Journal of Health Care Quality Assurance*, Vol. 20, No. 3, 2007, 215–231.
- [15] J.G. Gómez, M.M. Costa, Á.R.M. Lorente, "A critical evaluation of the EFQM mode". *International Journal of Quality & Reliability Management*, Vol. 28, No. 5, 2011, 484–502.
- [16] J.A. Alexander, L.R. Hearld, H.J. Jiang, I. Fraser, "Increasing the relevance of research to health care managers: Hospital CEO imperatives for improving quality and lowering costs". *Health Care Management Review*, Vol. 32, No. 2, 2007, 150-159.
- [17] S. G. Leggat, T. Bartram, P. Stanton, "High performance work systems: the gap between policy and practice in health care reform". *Journal of Health Organization and Management*, Vol. 25, No. 3, 2011, 281–297.