

# The Role of Some European Excellence Model of Quality (EFQM) Standards in Supporting Infrastructure Development Strategy for Public Services (A Field Study)

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## ABSTRACT

This research focuses on one of the important topics that contribute to supporting and developing the strategies of public service institutions, represented by defining the role of the European Excellence Model of Quality (EFQM) standards in developing the infrastructure strategies of the public service sector, which in turn affects the institutional performance. Therefore, this research aims to explore the possible extent of applying and benefiting from the European Excellence Model (EFQM) in improving the electric power distribution sector. The qualitative analysis methodology (Qualitative and not quantitative) was adopted by using semi-structured interviews, as the General Company for the Distribution of Central Electricity in Babylon Governorate was the field for applying current study. The sample size of the employees reached 20 including the heads of departments in headquarter of company and its subsidiary branches as the total number of employees became 125. Qualitative methods also used to analyze and process the data, depending on the mechanism of the qualitative data processor Nvivo. The study determined the model criteria that are possible and limited support which can be applied, and reported that the European Excellence Model for Quality has a clear role in supporting and developing the infrastructure in general, and the application of this model is one of the most important requirements for supporting and developing the infrastructure strategy in the General Company for the Distribution of Central Electricity.

## Keywords

European Quality Excellence Model, Infrastructure Strategy, Qualitative Analysis.

## Introduction

The pursuit of excellence and the application of quality standards and their practices has become a primary goal in various institutions to face contemporary global challenges. The approach to continuous improvement of the quality of processes and services requires a better and more accurate application of quality standards to ensure the continuity of institutions to meet the various challenges within the business system. Accordingly, the concepts of business excellence models emerged as a general framework for development efforts and activities in order to improve performance and business excellence. The European Quality Excellence Model (EFQM) is considered one of those typical tools for achieving excellence in general institutional performance.

## Materials and Methods

### The First Topic

### The Methodological Framework of Research

### Firstly: Research Problem

The infrastructure in the public service sectors faces complex and interrelated problems, at a time when there is an increase in the need for realistic strategies to control the management of these vital facilities and to provide services that meet the needs of the beneficiaries. Therefore, when the tools for developing and supporting strategies is mentioned for a vital and important sector such as energy distribution, it can be noticed that there is no real adoption of quality standards and makes obstacle to infrastructure and prevents achieving outstanding performance. The main reason for this is the conflict of perceptions and institutional priorities about quality or business excellence models such as (EFQM) which causes lag and interference in the completion of strategic plans

and based on the research problem and the need for answers to a set of questions as follows:

Can infrastructure be developed in the electricity power distribution sector without the use of appropriate quality standards?

Can the (EFQM) be applied in improving energy distribution sector strategies?

Are there clear strategies, supported policies, plans, goals and processes to meet needs?

Does the (EFQM) helps in supporting and improving strategic performance for electric power distribution sector?

## Secondly: Research Importance

The importance of research arises from the need to support and develop the infrastructure of energy distribution sector as a major sector associated with vital facilities for other sectors as well as the research is gaining importance from the following list:

1. Clarifying the theoretical foundations of the research variable (European Quality Excellence Model, Service infrastructure) in terms of ideas, methodologies and goals as they are vital and renewable themes in administrative thought.
2. Clarifying the importance of investing (EFQM) in improving work strategies by improving the methods and skills of leadership.
3. Studying how to develop plans, goals and operations to implement visions and institutional tasks according to specific time tables to meet the needs and planning of human resources to suit the specific strategy according to procedures and design

of operations supporting the improvement of public performance.

## Thirdly: Research Objectives

The current research objectives indicate the role of (EFQM) as a major variable in support and development of infrastructure strategy in the energy distribution sector as a secondary variable through the specific model standards, thus, this research seeks to achieve:

1. Explore any extent possible from the (EFQM) in improving the energy distribution sector in general.
2. Investigate the possibility of applying the (EFQM) in the studied company to support infrastructure in the electric power distribution sector.
3. Measuring the successful application of (EFQM) in improving the strategic performance of studied company.
4. Identify obstacles that prevent the effective application of the (EFQM) and invest in support and develop the energy distribution sector.
5. Taking advantage of the outcome of study and investment in achieving recommendations to help develop the strategic of public services sectors.

## Fourthly: Hypothetical Plan of the Research

Illustrative scheme was designed to show the possibility of applying (EFQM) as a major variable in supporting the strategic infrastructure of public services sector as a secondary variable in accordance with the problem and objectives of the research and achieving outstanding institutional performance (Fig 1).

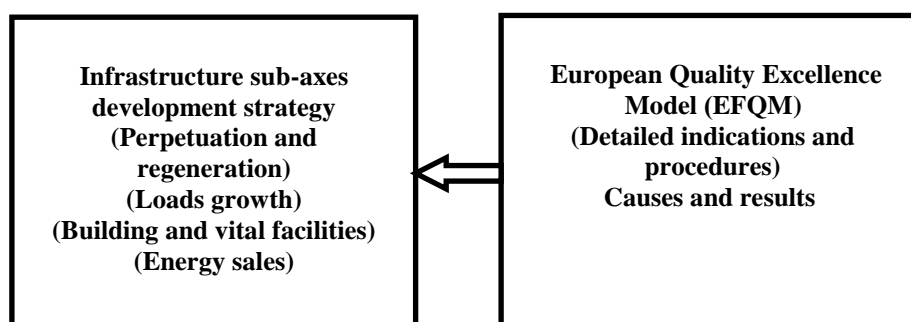


Figure 1. The outline of study

### **Fifthly: The Main Research Questions**

In order to achieve the objectives of current study and to obtain logical answers to the questions of the research problem, the qualitative research approach was used as it is consistent with studies related to quality and it is not possible to find dimensions for the European model of excellence because the criteria is clear in it. In addition to explore the potential contribution of European model of excellence to support and develop the infrastructure strategy.

The main question: To what extent can the criteria of the (EFQM) contribute to support and develop sub-axes of infrastructure in the General Company for the Distribution of Electricity?

From the main question, three sub-questions were emerged as follows:

1. Are there standards for (EFQM) that contribute strongly in supporting the strategy of sub-axes of infrastructure?
2. Are there some standards of (EFQM) which have a limited role in supporting the strategy of sub-axes of infrastructure?
3. Are there some standards of (EFQM) which have no role in supporting the strategy of sub-axes of infrastructure?

### **Sixthly: Community and Research Sample**

Current research was applied to energy distribution sector, particularly 120 relevant heads of departments in headquarter of the General Company for the Distribution of Electricity and its branches. According to the qualitative research method, the sample must be subject to personal interviews to give detailed information, and when the specific tables for determining the size of appropriate sample viewed, 20 heads of departments were selected as participants to complete the study.

### **Seventhly: Data Collection Tools**

The achievement of research goals and the opacity of theoretical aspect of which the scheme of study and validate expected relations must be adopted by a number of tools:

1. Books and research references
2. Personal reviews

This study was represented by public services sector, particularly studied institutions using qualitative approach and accordingly, the scientific cohabitation and personal reviews with employees were adopted. Before analyzing the data, it is necessary to refer to the types of interviews as the researchers agreed on three types of them:

Structured interviews, unstructured interviews and Simi-structured interviews, as the Simi-structured interviews (which used in this study) that considered the most common interviews. It usually contains open questions to some extent, meaning that it allow employees to have more flexible answers and it similar to questionnaire and analyzing data for obtaining results (Walliman, 2006). The personal interviews are more related to qualitative research as they involve some kind of questions that lead to more details.

### **Eighthly: Research confines**

Limiting the confines of academic research within limited framework and scopes is a basic necessity, and accordingly, the confines of research can be stated as follows:

- 1- Spatial confines: The spatial confines and geographical confines of research are confined to central Euphrates region of studied company.
- 2- Temporal confines: The temporal confines extended from the beginning of July 2020 to the end of March 2021.

### **The Second Topic**

#### **Theoretical Framework**

#### **Firstly: European Quality Excellence Model (EFQM)**

##### **1- The Concept of the European Quality Excellence Model (EFQM)**

The European Quality Excellence Model (EFQM) was based on a set of concepts and assumptions that represent the relationship between the elements on two sides, the causes and results,

which means that there is a causal complementarity between the two sides in (EFQM) due to the link between the factors in both sides, as the basic concept is that as long as performance on enabling side is excellence, this will lead to an outstanding aspect of results (Moeller et al., 2000). There are also several concepts of (EFQM) each of which depends on the visions and ideas of researchers in their different orientations, as Antonaras et al., (2009) believes that the (EFQM) is a practical tool that helps institution to establish an appropriate administrative system by determining its position towards excellence and helping it to understand gaps and find solutions. The (EFQM) is a non-mandatory organizational development that includes a framework based on nine criteria, five of which are enabling and the other four are results. Enabling standards focus on what the institution does or can do to produce a distinct service for its stakeholders. These various criteria serve as a supporting guide, not mandatory checklists (Stephen, 2007). The researcher's point of view is that the (EFQM) represents an evaluation tool that can be used by various institutions to achieve sustainable institutional discrimination based on business excellence by providing correct measurable inputs and thus achieving outputs that distinguish institutional work according to the total quality management system.

## **2- European Quality Excellence Model standards**

The standards of (EFQM) define eight general criteria for making institutions within the axes of excellence including: bias for work, communication with customers, independence and entrepreneurship, the expansion of individual productivity, focusing on business with basic value, focusing on specializations in the institutions business, simple structure of management levels and commitment to the founders core values (McAdam and Bannister, 2001). It must be noted that, from the researcher's point of view, the focus has been on the most important criteria and linked to the requirements of the current study shown below:

### **1)- Leadership**

Modern management thought adopts leadership in a sense that includes encouragement, rationalization, orientation, assistance and evaluation of the performance of individuals and construction according to a common language of understanding with customers and workers, as everyone is partners in success and excellence (Al Sulamy, 1997).

### **2)- Customer Results (Customer Satisfaction)**

Bennett and Rundle-Thiele, (2004) indicated that the satisfaction of customers who trust in the products and services of the institution is the key to survival that the various institutions aspire to, it is a successful, correct path that encourages the continuity and improvement of any business in the future.

### **3)- Employees**

The standards of working individuals is the performance provided by individuals towards all tasks and specializations associated with them according to the job description, needs of institution, and it needs distinction, innovation and harmony to reach the best practices that achieve the ideal and excellence of institution (Dolors et al., 2018).

## **Secondly: Infrastructure sub-axes**

According to the sources, there are currently no specific and fixed dimensions of the infrastructure, but rather differ according to the studied sector, and given that the target sector in the current research is the distribution of energy and the current study is based on the qualitative approach, there is no urgent need to define accurate dimensions to measure the impact of the infrastructure as a secondary variable in another major variable such as (EFQM). There are several sub-variables of infrastructure, according to Vartabedian, (2017) who mentioned that good maintenance reduce costs and increases resilience as maintenance of power system infrastructure is essential. While, Hong and Fan, (2016) reported that it is necessary to have a robust tool that can

provide insight into the current and future conditions of electrical distribution networks including one that focus on providing an estimate of the load and expected energy sales. Moreover, Schweikert et al., (2019) mentioned that the power network consists of an infrastructure for transmission, distribution and production, and the problems of transmission and distribution network are usually responsible for most of the outages occur. In current research, emphasis was placed on two sub-variables that are the most important as determinants of infrastructure in the studied sector.

### **Sub-axes of Infrastructure in the Electrical Power Distribution Sector**

#### **1- Maintenance and Renovation**

The concept of preventive (programmed) maintenance has become a common term among scientists and specialists in different sectors, and this concept is gaining importance due to the ability of maintenance operations to facilitate procedures for maintaining energy network (Seloane et al., 2006). Preventive maintenance is defined as “activities that are carried out according to a pre-set, periodic and specific plan to preserve the equipment in its original working condition through inspections and renewals”. Emergency maintenance represented “interactive activities after an emergency event on parts of electrical distribution network that led to the failure and under which calibration or reflection of electrical feed” (Wang et al., 1995).

#### **2- The Growth of Electrical Loads**

The prediction of electrical load plays an important role in controlling the power and planning system as well as energy sales at a time of energy resources distributed on the electrical network exceptional challenges for power distribution network operators. Therefore, there is a need for strong tool to provide a vision of current and future conditions for distribution networks including the provision of target load or decision-making applications and the expected sales of energy (Hong and Fan, 2016).

### **Third Topic**

#### **Practical Part**

##### **Firstly: The Test of Data**

The applied aspect, testing and discussion of results consists from three investments, with the first aspect addressed the selection of qualitative analysis (cods) to analyze the data of interviews and how to select it, while the second aspect includes describing the results of study variables, and the third aspect includes analysis of the sample data for qualitative and interpretation.

##### **The Entrance of Qualitative Approach to Analyze Personal Interviews Data**

It was mentioned previously that the qualitative approach used in this study which represented by personal interviews, therefore, these interviews were conducted with 20 of specialist's heads of departments in studied company, and each interview took about 20-45 minutes. The main and the branches questions were used through interviews and it were recorded and kept confidentiality according to instructions of qualitative interviews and scientific research ethics. The purpose of these interviews was to find out the supporting of the secondary variable (infrastructure) by the main variable (EFQM). The researcher was adopted several steps to analyze data by using fully knowledge theory approach in extrapolation obtained data from interviews, in addition to measuring data and results reliability and create key topics (Themes) by following steps:

##### **1- Principals of Fully Knowledge Theory and Its Role in Qualitative Analysis**

The grounded theory is considered one of most important theories in the methodology of qualitative analysis of data and this theory promoted by Corbin and Strauss, (1990) which used to extrapolate as a methodology of research, where it differs from the research approach based on the deductive hypotheses in scientific research. It indicates three types of data encoding, the first one is open coding which means the selecting of

data categories to help describing the general features of research, the second is axial coding which means recording the data by methods that helping to understand the relationships between the main variables and suggested cods, finally, the selective coding which means determination of common data between open coding and axial coding.

## 2- Measuring Data and Results Reliability

The reliability in qualitative analysis represents a key step to reach comprehensive data explanations and a deepest understanding for researcher (Babbie, 2010), by converting audio recordings into written texts, the data reliability and finally

entering written data from documents into specific data processing program (Nvivo) according to the codes. Thus, this leads to get basic topics (themes) which help connecting the facts together (Lee and Lings, 2008). There are two sources of getting codes, reliance on the theoretical and academic frameworks used by the researcher and codes that gets by personal interviews itself (William, 2015). It should be noted that there is no rule to select the number of codes from exporters and this number is supposed to be controlled, and researchers agree that codes should not increase from certain proportion, for instance, 20 codes. Moreover, there are main codes that are branched to sub-codes as listed in Table 1.

**Table 1.** The Classification of Main and Sub-codes (Final Codes)

Variables	Main codes	Sub-codes
(EFQM)	Administrative leadership	Administrative performance, field tours, administrative dependency, external challenges
	Human resources	Institutional experience, authorized, training requirement, external interventions
	Beneficiaries	Programmed shutdown, nature of complaints, completion of complaints
Infrastructure in energy distribution sector	Maintenance	Running networks, programmed maintenance, emergency maintenance
	Energy demand	Expectations and reports of load growth, times of peak loads, exceeding and urban expansion

## 3- Measuring the Creditability of Data and Results

The term creditability in qualitative entrance refers to the process which helps to identify and determine the relationship between data that is adequately involved in personal interviews. It is described as a criterion used to ensure that the researcher understands the relations between data correctly, and the search is made according to controls of proper practice and application, maximum borders of merit and confidence (Bryman, 2015).

## 4- Creating Key Topics (Themes)

The key topics were created after finishing data encoding, as the search step starts by determining themes which nominated from qualitative data and can combine similar codes that are already

determined, as these themes represents basic and essential ideas of those qualitative data (Lewis, 2015).

### Describing the Variables of Study

#### Firstly: Analysis and Interpretation of Qualitative Research Sample

The opinions of respondents were used from studied sample according to the codes that given to them, for instance, the code 5 represents respondent 5, code 10 represents respondent 10...and below is the comprehensive analysis of data from respondents. In this regard, researchers showed three cases of data analysis, if there is a consensus by sample, the best answer is chosen from respondents to represent that consensus, and the second case where the opinions of respondents were fluctuated between admission and rejection, the best answer also chosen but from two sides,

the first which represents the first and most subtracted opinion by respondents and the second side which represents decayed opinion and if there is another opinion it also chosen. The third case is no consensus and not even fluctuating of opinions but there is large dispersion of respondent's opinions, in this case the researcher depends on choosing the most important answers that mentions clear facts supported by scientific evidence.

## **The First Axis: The Questions of (EFQM)**

### **1- Leadership**

First question: How far the company management is improving the administrative system and general institutional performance?

Administrative performance is suffering from external and local impacts that generated the choosing of these administrations without specialties and expertise required, thus choosing those administrations is depended on their enrollment or loyalty. Therefore, this cause an interaction in important decisions and effect on administrative performance and this was mentioned by the respondent (3) as follows:

"The level of improving the general administrative performance is affected by nepotism which surrounding services sectors as a result of external and local bodies in the selection of those administrations which affects the nature of administrative decisions".... respondent (3)

Another opinion related to the non-independence of appropriate decisions to fully plan the company resources, although they are transforming in to the corporate system, but they still as public companies associated with the Ministry central as mentioned by the respondent (9):

"The administrative system of the company is a part of administrative system belongs to Ministry of Electricity, as it follows the vision and decisions of Ministry even after the transforming in to the corporate system which self-financed, which is affected by limited powers granted".... respondent (9)

In addition, the senior administrative leadership has a great role through which it can impose strict control and follow-up measure to control activities and work procedures that would maintain the

stability of power distribution networks and maximize productivity, thus contributing to covering the growing demand for energy. This was clearly mentioned by respondent (2) as follows:

"The power distribution sector is one of public services sectors that need constant scrutiny and follow-up of activities and work reports, such as activities and reports of loads growth, sales and other procedures of electrical power distribution"... respondent (2)

Second question: What is the relationship of the company management with the stakeholders (partners, dealers, suppliers, participants)?

The follow-up mechanisms required for the output of the energy distribution process need further development, which is to direct the company managements to make relationship with stakeholders, by considering them as partners in work in accordance of law on the one hand, and there is a consensus that the company managements have a good relationship with partners which is mentioned by respondent (3) as follows:

The management relationship with all partners is a close relationship in a way that serves the work since the stakeholders, suppliers and others are considered partners in work according to the laws and commercial contracts that are directed according to the approved specifications of the Ministry of Electricity... respondent (3)

The extent of responds of studied institution to the standard of leadership.

It can be concluded from what the respondents mentioned above, that the standard of leadership is affected by determinants related to "administrative performance" "external influences" "limited power" "control procedures" "supplier evaluation" "user service evaluation".

### **2- Employees**

First question: Is the human resources planning according to a job description that matches the company specific strategy, institutional structure and internal system? And how is that done?

Human resources planning is not done in a way that commensurate with the needs and functions of the situational structure of the company, but rather it is done according to ministerial orders

executed in this regard, which may cause non-conformity to those job description, as respondent (9) said:

“The Ministry of Electricity is one of the ministries that has a job description for existing jobs, but workers may not be subject to the approved job description according to tasks, duties and responsibilities because the recruitment policy is a central policy” ... respondent (9)

The institutional practices are considered an important factor in energy distribution sector, it may be reduced in the processes of recycling human resources, expressing the reasons for this in other opinion which is to provide matters and personal motives on the requirements of the interest of work in a manner that does not correspond to professionalism or conform to approved specifications and the distribution of workers according to the impact of external influences which is mentioned by respondent (2):

“The determinants of jobs required according to the tasks and duties of the ministerial approved institutional structure with the company are made through documented and specific cards for each job that includes a definition of that job that the employees perform” .... respondent (2)

Second question: To what extent are the company employees developed and motivated according to the requirements of achieving outstanding performance?

The research sample showed that the motivation sections for workers are defined by two things, one of which is rewards and material incentives, which are related to the speed of completion of the work assigned to those workers or granting them a career development opportunities associated with changing their titles by improving their academic levels or by granting them career advancement that distinguishes them by the higher management. The other factor is the developmental courses that are established as the importance of passing them is reflected in the monthly allowance at work sites such as the risk bonuses granted to workers that is mentioned by respondent (9):

The material incentive in general is applied in accordance with the federal instructions received from the Ministry of Finance, which are due to

implement bonuses that may be included for workers ..... respondent (9)

The extent of responds of studied institution to the standard of employees

It can be concluded from what the respondents mentioned above, that the standard of employees is affected by determinants related to “ministerial recruitment mechanisms” “personal experiences and motivations” “job positions bonuses” “development courses”.

### 3- The Criterion of Customer's Results

The main question: Are the opinions of the beneficiaries on the services provided taken into consideration in developing the company strategy? And how is that done?

The company needs to support the culture of opinion of the beneficiaries of the services provided by taking into account the opportunities for improvement related to those results. In the same regard, the company needs to support the culture of communicating with the beneficiaries by differentiating the complaint compared to the time required for the response by the working staff. This was clearly mentioned by respondent (9) as follows:

The consumer satisfaction survey for electric energy is carried out according to a questionnaire collected through the maintenance centers on a semi-annual basis, analysis and submits its reports to the Ministry taking into account the attachment of possible opportunities for improvement ... respondent (9)

The respondent (6) was added that the satisfaction of the beneficiaries is related to the sustainability of the electric power and covering the ever-growing demand as follows:

“The beneficiaries satisfaction with the services provided is directly proportional to the hours of electrical energy supply” ..... respondent (6)

The extent of responds of studied institution to the standard of beneficiaries' results

The researcher concluded from what the respondents mentioned above, that the standard of beneficiaries' results is affected by determinants related to “questionnaire for the opinions of the beneficiaries” “complaints completion reports” “the sustainability of energy supply”.

## **The Second Axis: Questions of Sub-branches Variables of Infrastructure**

### **1- Perpetuation and Renewing**

First question: How do you see the covering of company plan to all the requirements for the periodic maintenance of the infrastructure in the distribution sector?

The company sets programed plans for maintenance in two times in order to take into account the times of the loads falling on the network and their scheduling them depending on those times and needs. This is based on appraisal reports and disclosures depending on the accuracy of identifying data and information for project completion rates or describing the state of the network and its further needs, or the non-compliance of maintenance officials and working staff with the scheduled maintenance plans and identifying those needs. In addition, the lack of qualified skilled staff that can contact with the live network, and accordingly there is a need for critical administrative decisions for technical details regarding the nature of the distribution of maintenance staff, as the respondent (3) said:

“The periodic maintenance plans are prepared according to special schedules in which the low loads and electrical energy consumption are taken into account, but their application according to the actual need faces constraints of weak capabilities of preparing the materials necessary to meet the actual needs”..... respondent (3)

Second question: Do you think that the periodic maintenance operations in the company achieve the necessary sustainability of the infrastructure of the electric power distribution sector? Do you see a clear strategy in this area?

The emergency maintenance operations depend on the extent of commitment to the programmed and planned maintenance operations that have been accomplished and decreases whenever the periodic maintenance of the network and vital facilities is activated. Also, the selection of maintenance center sites has specific criteria that have positive impact on the coverage of maintenance operations, and the application of criteria for selecting maintenance center officials has an important impact on achieving

sustainability by choosing the most appropriate in terms of requirements or necessary expertise which was mentioned by respondent (4) as follows:

“The maintenance of the infrastructure of power distribution network depends on the programmed maintenance operations, and the emergency maintenance operations are determined by the presence and completion rates of the achieved quarterly programmed maintenance, the lack of the necessary allocations to meet the need for periodic maintenance is not only reason for this, but there are other reasons, the most important of which are the determinants of the state land acquisition, also one of the most important strategies for sustaining the electric power distribution sector is what relates to the criteria for selecting operating maintenance center officials and others that represent the selection of maintenance center locations”.... respondent (4)

The implementation of projects has specificities and priorities that support strategies for sustaining the infrastructure of the energy distribution sector, which is why the planning authorities must take the opinion of the executive authorities on the plan of these projects to prevent the occurrence of operational interference, the most prominent of which are the problems of network taboos and their conflicts, as the respondent (5) said:

“Covering the speculative statements of the details that are prepared for all the project sections, whether rehabilitation work or the new implementation of the projects and their accuracy is related to the level of participation and consultation of the executive bodies in those joints of the plan, the reason is to prevent the interaction of many planning matters that may cause delays and confusion in the work”..... respondent (5)

Third question: How to respond to emergency maintenance operations at peak loads times or the occurrence of exceptional circumstances?

There is an evident from the research sample that the response to emergency maintenance is fairly good and related to the time factor, lack of staff or the extent of deficiency in the availability of specialized mechanisms to reduce the periods of work completion as the number of cases recorded for emergency maintenance is directly proportional to the growing loads and excesses occurring on the power distribution networks as

well as the increase trespassing on networks and lack of awareness of the details of electrical lines by trespassers which was mentioned by respondent (8) as follows:

"The response to emergency maintenance operations is good despite the limits and possibilities of work in relation to the time factor and the availability of staff, as this can be determined through the accomplished of the complaints received"..... respondent (5)

The extent of responds of studied institution to sub-variables (Perpetuation and renewing)

The researcher concluded from what the respondents mentioned above, that the perpetuation and renewing are affecting by determinants related to "scheduling maintenance" "work staffs and management decisions" "choosing of maintenance centers" "selection of maintenance center officials" "flexibility of implementation" "emergency maintenance" "increasing loads and excesses" "complaints received".

## 2- The Growing of Loads

First question: Do you see that the load forecasting contributes to the long-term resource planning of the feeding units (secondary stations)? And how is this done?

The prediction of electrical loads is an important factor in selecting the sites of the stations and developing the potentials of electrical supply in them, which calls for considering load prediction processes important future indicators for developing power distribution networks. This was stated by the respondent (6), as follows:

"The load forecasting reports have a great role in developing electrical power distribution stations and control centers, as it contributes to locating stations that need treatments or developing their electrical feed by knowing the amount of increases occurring in those loads or electrical loads expected to occur..." (6)

The second question: Does the company adopt strategies that support energy efficiency and rationalization, and how do they contribute to containing energy demand and reducing energy wastes?

Energy rationalization and efficiency strategies need to implement the Ministry of Electricity specifications by external parties represented by

the relevant ministries to make these strategies successful. In this regard, the respondent (8) answers the following:

"Media support for strategies that support the rationalization and efficiency of electric energy, and education of government agencies or the private sector alone is not sufficient to effectively implement these strategies, as they need a law that gives full control over the import of energy-saving electrical devices in accordance with true quality control that prevents the import of energy-consuming devices... responder (8)

The extent of the researched institution's response to the sub-variable (load growth)

The researcher concludes from what the respondents mentioned above, that the load growth is affected by determinants related to "studying the volume of increase in loads", "developing staff and techniques", "ministry specifications", and "rationalization and permanence of supply".

Secondly: The possibility of developing the infrastructure in light of the European model of excellence.

The fields of support for the infrastructure strategy

The relevant fields, which the research sample showed, are important in supporting the infrastructure strategy with the four sub-variables (sustainability and renewal, load growth, vital buildings and facilities, energy sales) that contribute directly to the development of its strategies, by supporting two or more sub-variables as follows:

## 1- Leadership Standard

The data analysis proved that the leadership criterion responds to two sub-variables only of the four sub-variables of the infrastructure, but not all of them, as follows:

A- With regard to the direction of the company's departments to support the relationship with stakeholders, the leadership criterion supports the infrastructure strategy in dealing with suppliers, to provide the necessary support for the company and the sub-variables (buildings and vital facilities, maintenance and renewal). And "the management relationship with all partners is a close relationship with what it serves the interest

of work “responder (3), as” the company is trying to find a system for dealing with suppliers known as the supplier evaluation system, which is (part of the quality management system) defines the company's relationship with suppliers to provide basic services “responder (9). This is in line with a study (Morales-López, 2013), which emphasizes the role of leadership in developing the vision and values of the institution, motivating stakeholders and collaborators and encouraging them to act according to the requirements and needs of the institution.

B - The analysis of the data obtained from the respondents proved that the leadership criterion does not support the infrastructure strategy for the sub-variables (load growth, energy sales), as the role of the administrative leadership was not at the required level in terms of continuous auditing and follow-up of activities and work reports “responder (2). The external influence in choosing the appropriate departments without referring to the required specializations and factors of expertise negatively affects the independence of decision-making, and “which affects the nature of administrative decisions related to higher management “responder (3). This is inconsistent with the study Wang, et al., (2010 ), which states that the activities and processes associated with energy management can be considered "the best strategy used in most institutions by being praised as the optimum management of equipment. In general, the researcher believes that the leadership criterion supports the infrastructure strategy of the electric power distribution sector, as it supported two sub-variables (maintenance and renewal, vital buildings and facilities) and did not support the other two sub-variables.

### Limited Areas to Support the Infrastructure Strategy

The limited areas of support for the infrastructure strategy, but not at the required level which rise to the level of developing the strategies of the four sub-variables (sustainability and renewal, load growth, vital buildings and facilities, energy sales) and which are still in need of further development as they supported only one sub-variable of the four sub-variants of the infrastructure as follows:

### Customer Results Criterion (Beneficiaries Satisfaction)

1- The criterion of beneficiaries' results, as the research sample of respondents in the company is related to determinants that the company takes into consideration through the opinions of the beneficiaries of the service, or through the nature of the complaints completion reports received from participants. In addition, taking into account the opinions of the beneficiaries needs to invest the opportunities granted to the company. In this regard, the data analysis proved that the beneficiaries' outcome criterion does not respond to the three sub-variables (load growth, vital buildings and facilities, energy sales) as media support for strategies that support the rationalization and efficiency of electric energy, and educating government agencies or the private sector alone is not sufficient to effectively implement these strategies “responder (8), and also that “these conflicts cause changes in the paths and plans of these projects, which causes increased costs and periods of completion...” responder (5). “The company needs to follow up the necessary readings to determine the quantities of energy sold according to the nutrients and capacity equipment.” responder (8)

2- The company responds to only one sub-variable of the four infrastructure sub-variables (sustainability and renewal) as the company supports a culture that accepts surveyed beneficiaries opinion about services according to their positive proportionality with energy demand. The beneficiaries satisfaction with services provided is directly proportional to the hours of electrical energy supply “responder (6). This is in agreement with Bennett and Rundle-Thiele, (2004) which confirmed that the beneficiaries satisfaction that trust in institution services and products, is the key of survive that aspire various institutions and the successful and correct path that encourages the continuity and improvement of any work in the future. In general, the beneficiaries' outcome criterion supports the strategies related to the sub-variables of the infrastructure, especially (sustainability and renewal) energy.

Thirdly: Fields that have not proven support for the infrastructure strategy.

The fields in which the respondents from the research sample did not indicate their importance in supporting the infrastructure strategy or that have not proven to be related in supporting and developing the strategies of the four sub-variables (sustainability and renewal, load growth, vital buildings and facilities, energy sales) at the present time at least.

Employees’ Standard

The workers criterion did not appear to have a direct or indirect relationship from the viewpoint of the respondents from the research sample in supporting the infrastructure strategy in the energy distribution sector. Due to the respondents’ opinions that were related to the need of developing the human resources planning process according to a job description that may or may not match with the company’s specific strategy, organizational structure and internal system as

well as the extent to which the company’s employees are motivated and developed. In general, the standard of workers and through the opinions of the respondents from the sample is not linked to strategies that support the sub-variables of the infrastructure (maintenance and renewal, load growth, vital buildings and facilities, energy sales), for the present time at least.

The Final Tested Model

The figure below shows that the standards (leadership, strategies and policies, partnerships and material resources, procedures and processes) support the infrastructure strategy. As for the two criteria (beneficiaries’ results and community outcomes), they are among the limited criteria in support of the infrastructure strategy, and the workers standard does not support the infrastructure strategy.

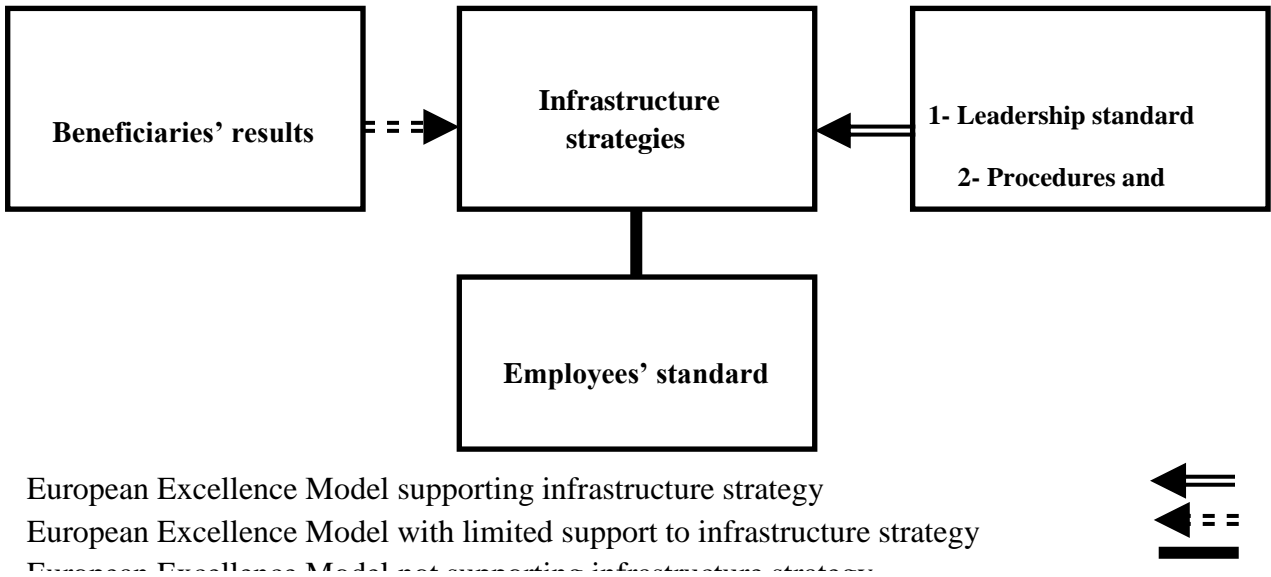


Figure 2. The final tested model

The Fourth Topic

Conclusions, Recommendations and Future Proposals  
The First Topic: Conclusions

This topic consists of the most important and most prominent conclusions related to the theoretical and practical aspects of the current study, and the

conclusion from the research questions and analysis of the qualitative entrance data as follows:

- 1. The European Excellence Model for Quality (EFQM) in general supports the infrastructure strategy in the studied department and for the (leadership) criterion only.

2. The analysis of the data showed that the European Excellence Model for Quality (EFQM) partially supports the infrastructure strategy of the surveyed department through the two criteria (results of beneficiaries).
  3. It appeared during the analysis of the data that the workers criterion does not support the strategies related to the sub-variables of the infrastructure, nor has it shown a direct or indirect relationship in supporting the infrastructure strategy in the power distribution sector, and that is at the present time at least.
  4. The leadership standard supports the strategies of the sub-variables of the infrastructure and has two sub-variables (buildings and vital facilities, sustainability and renewal) and on the one hand with regard to providing the necessary network resources by supporting and evaluating the relationship with customers. Infrastructure represented by the two variables (load growth, energy sales).
  5. The beneficiaries' results criterion supports the strategies related to the sub-axes of the infrastructure, especially (sustainability and renewal) at the required level according to meeting the energy demand and is linked to the determinants that the company takes into consideration through the opinions of the beneficiaries of the service, or through the nature of the reports of completion of complaints received from participants and does not support other variables.
- of its work strategies represented by (beneficiaries results) criteria.
  3. The importance of the General Company for Energy Distribution in applying the standards of the European Excellence Model for Quality (EFQM) that do not support the strategies of the sub-variables of the infrastructure at the present time represented by the standard of workers.
  4. The necessity of activating the leadership roles of auditing and continuous follow-up of activities and work reports and selecting appropriate departments according to specializations and required experience factors, to achieve independence in taking appropriate decisions.
  5. Paying attention to developing an accurate information base upon which planning effective strategies is based, through the accuracy of the results of the work activity reports sent to provide a current and future vision for the electrical distribution networks, and reviewing policies to achieve strategic solutions and treatments, the most important of which is related to achieving a truly programmed maintenance.
  6. Creating and providing the necessary capabilities to achieve compatibility between the type and reality of the current state of the power distribution network and the technical needs for the implementation and operation of infrastructure projects, continuous improvement of its operations, and a real methodology that meets the needs of the beneficiaries of the service.
  7. The necessity to address the problems related to the random expansion of residential buildings, and to take into account the necessary flexibility for the procedures and processes necessary to support investments in the energy distribution sector by updating the law for investment projects and simplifying the procedures for the delivery of electric current to the beneficiaries of services.
  8. Paying attention to the opinions of the beneficiaries in addressing the requirements of the sub-variables, in a manner that meets the desires of the beneficiaries of energy demand. By taking

## The Second Topic: Recommendations

1. The need to increase interest in the standards that actually support the strategies of the sub-variables of the infrastructure in order to be helpful in implementing the other criteria represented by the criterion (leadership).
2. Increasing interest in standards with limited support for strategies of sub-variables of infrastructure, in order for the General Company for Energy Distribution to promote the application of the European Excellence Model (EFQM) in all the joints

advantage of the real opportunities afforded to the company, in analyzing and studying the results of the opinion survey, and by supporting a culture that accepts the opinions of the beneficiaries, as they are reflected positively with the increase in the hours of supply of electrical energy.

9. Developing the planning process for human resources according to a specific job description and motivating the company's employees to benefit from the standard of future workers in supporting infrastructure strategies, directly or indirectly, by providing the necessary expertise for the energy distribution sector.

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