Sudan University of Science and Technology

Collage of Graduate Studies

Total Quality Management and Excellence Centre

Impact of Applying EFQM Excellence Model on Business Performance (Case Study: Giad Industrial Group)

أثر تطبيق النموذج الأُوروبي للجودة على أداء الأعمال (دراسة حالة: مجموعة جياد الصناعية)

A Thesis Submitted in Partial Fulfillment for the Requirement of M.Sc. Degree in Quality Management and Excellence

By

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DEDICATION

To my mother, to the soul of my father, 'Allah' grant him the Paradise.

To my brothers and sisters, to my wife and kids, to all with endless love.

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ABSTRACT

The aim of this research is to study the impact of EFQM implementation on financial and non-financial performance of the organization. The research study two companies within the Giad Industrial Group, and examined the perceptions of randomly selected respondents from three companies in the Group. The study analyzed the correlations between the total European Foundation for Quality Management (EFQM) scores achieved by the company and the production, deflated sales, net deflated profits and market share. The Pearson correlations showed no significant correlations between the total EFQM scores achieved and the net deflated profits and market share, and there is negative correlation between total EFQM scores and production of the studied companies.

The graphical layout of EFQM scores, deflated sales, production, net deflated profits and market share clarify some sort of relation between the EFQM scores and the mentioned parameters although not side by side; the effects take place in the subsequent years; as scores increased or decreased the performance of the company shows the positive response in the subsequent years.

The study showed that 87% of the selected respondents' agreed that EFQM model has positive impact on their companies.

مستخلص الدراسة بالعربي

الهدف من هذا البحث هو دراسة تأثير تطبيق النموذج الأوروبى للجودة على الأداء المالي وغير المالي للمنظمة. درس البحث شركتين داخل مجموعة جياد الصناعية، وفحص إدراك المستجيبين الذين تم إختيارهم بشكل عشوائي من ثلاث شركات في المجموعة. حللت الدراسة الإرتباط بين إجمالى نقاط درجات النموذج الأوروبى للجودة المُتحصلة بواسطة الشركة والإنتاج، المبيعات المخفضة، صافي أرباح الأسعار المخفضة وحصة السوق. لم تُظِهر إرتباطات (بيرسون) أي إرتباط ذو قيمة معنوية بين إجمالى نقاط درجات النموذج الأوروبى للجودة و المبيعات المخفضة، صافي أرباح الأسعار المخفضة وحصة السوق، هناك علاقة سلبية بين نقاط درجات النموذج الأوروبى للجودة وإنتاج إحدى الشركات التى تمت دراستها.

يوضح الشكل التخطيطي لنقاط درجات النموذج الأوروبى للجودة والمبيعات المخفضة، الإنتاج، صافي أرباح الأسعار المخفضة وحصة السوق نوعاً من العلاقة بين نقاط درجات النموذج الأوروبى للجودة و المؤشرات المذكورة على الرغم من أن ذلك ليس جنباً إلى جنب؛ تظهر التأثيرات في السنوات التالية؛ مع زيادة الدرجات أو إنخفاضها، يُظهر أداء الشركة الإستجابة الإيجابية في السنوات التالية.

أظهرت الدراسة أن 87٪ من المُستجيبين يتفق على أن تطبيق النموذج الأوروبى للجودة له تأثير إيجابى على شركاتهم.

TABLE OF CONTENTS

CHAPTER THREE
METHODOLOGY

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1. Questionnaires:

2. Frequencies Respondents' Experience:

3. Frequency of Respondents Answer to Q. (5.1) - (5.16):

CHAPTER ONE

INTRODUCTION

1.1. Introduction:

Organizations are in need to identify and assess their strengths and opportunities for improvements, and evaluate their implementation of improvements and developmental approaches. To ensure sustainable financial growth, we need to keep our customers satisfied; this can be done by developing and delivering products and services that add value to the customers. Organizations also need to deliver excellent service to maximize retention, loyalty and reputation.

During the last few decades many models have been adopted as performance measurement techniques for the purpose of improving business performance. The most utilised models are the European Foundation for Quality Management (EFQM) Excellence Model in Europe, the Malcolm Baldrige National Quality Award (MBNQA) in the US, and the Deming Prize in Japan, besides; many other countries adopt their own criterion by manipulating the previous mentioned or integration of more than one model for example Singapore Quality Award Framework (1995), Canada Awards for Excellence (1989), Australian Business Excellence Framework (1988), UK Business Excellence Award (1994), etc.

Davies (2004) quoted Ghobadian and Woo that; regarding EFQM model that; "the model implicitly recognizes that the quality of the final offerings is the end result of a complex of integrated processes and employees' efforts and that it provides a useful audit framework against which organizations can evaluate their quality management methods, the deployment of these methods, and the end results".

Self-assessment using the EFQM Excellence Model can be seen as a systematic approach to introducing TQM concepts into an organization whilst also monitoring changes in organizational performance. Macleod and Baxter (2001) concluded that EFQM can act as a driver for the organization's continuous improvement initiatives as well as enabling areas for improvement to be identified.

According to EFQM (2013) regardless of sector, size, structure or maturity, organizations need to establish an appropriate management framework to be successful. EFQM Excellence Model is a practical, non-prescriptive framework that enables organizations to: (i) assess where they are on the path to excellence; helping them to understand their key strengths and potential gaps in relation to their stated Vision and Mission, (ii) provide a common vocabulary and way of thinking about the organization that facilitates the effective communication of ideas, both within and outside the organization, (iii) integrate existing and planned initiatives, removing duplication and identifying gaps, and (iv) provide a basic structure for the organization's management system.

Suárez et.al (2017), reported that; among the most significant effects of the implementation of EFQM model is the improvement of image, greater client satisfaction, increased commitment and satisfaction of employees, greater profit derived from the increase of exports, greater predisposition to innovation, strengthening the effectiveness of knowledge management projects and optimization of the use of the information systems. These benefits are linked to the greater competitiveness of the business and to obtaining competitive advantages.

Bassioni (2004) stated that "in the general area of managerial accounting, Kaplan and Norton identified that managers need much more than financial indicators to evaluate company performance. They developed the "Balanced Scorecard" concept where non-financial perspectives (leading indicators) precede and cause financial performance (lagging indicators). The scorecard contains a balanced view of four company perspectives, namely: financial, customer, internal business processes, and learning and growth". Bassioni (2004) quoted Sinclair and Zairi that" although the Balanced Scorecard has been widely accepted and adopted by firms, it has been criticized as not providing a complete performance measurement system, thus indicating the need for a more comprehensive system.

1.2. Problem Statement:

Recently, as followers for quality and excellence the policy makers in Sudan encourage and sometimes enforce the public sector to adopt excellence models. EFQM is the most implemented model in Sudan, which's important assumption, is that; excellent performances of the four results are derived through the five enablers. Organizations in order to evaluate performance and explore improvement opportunities carry periodic self-assessment. Increased organizational improvements inevitably lead to increased EFQM scores of the organization.

EFQM excellence model proposed to support organizations to achieve business excellence through continuous improvement and assessment of the processes and the achieved results. Theories and models sometimes faced unintentional factors which deviate outcomes and results from its anticipated routes.

This research aims to identify the impact of increasing or decreasing organization's EFQM scores on the performance of the organization. By study the correlations between the year to year EFQM scores and the year to year profits, sales, market share, volume of products and services delivered of the selected companies within the Group, and study the implementation of the model and the stakeholder's perception; we can prove whether there are actual performance improvements as scores increased, or the model application remains luxury and fallacious management propaganda.

1.3. Questions of the Study:

1. Is there any positive relationship between EFQM scores and the net profits achieved by the selected organizations?
2. Is there any positive relationship between EFQM scores and the sales of the selected organizations?
3. Is there any positive relationship between EFQM scores and the market share of the selected organizations?
4. Is there any positive relationship between EFQM scores and the production and/or services provided by the selected organizations?

5. What is the relation between implementation of EFQM model and the stakeholders' perception in the selected organizations?

1.4. The Research Variables:

This study supposed the EFQM model scores as independent variable and the tested business results; production, sales, market share and net profits as dependent variables as follows:

a. Iron Company independent variable:	Dependent variables:
Total EFQM scores	Sales (SDG)
	Net profits (SDG)
	Market share (% age)
b. Giad Elsewedy Cables Company independent variable:	Dependent variables:
Total EFQM scores	Production (ton)
	Sales (SDG)
	Net profits (SDG)

1.5. Objectives of the Study:

The main objective is to study the impact of implementation EFQM model on business results.

The specific objectives are to determine:

1. The relationship between EFQM scores achieved and volume of products and/or services delivered of the selected organizations.
2. The relationship between the scores achieved according to EFQM assessment and the sales.
3. The relationship between the scores achieved and the market share.
4. The relationship between the scores achieved and the net profits.
5. The relationship between EFQM implementation and the stakeholder's perception.

1.6. Research Hypothesis:

1. There is a statistical significant positive correlation between the organization scores and volume of products and/or services delivered.

2. There is a statistical significant positive correlation between the organization scores achieved in assessment according to EFQM model and the sales of the selected organizations.
3. There is a statistical significant positive correlation between the organization scores and the market share.
4. There is a statistical significant positive correlation between the organization scores and the net profits.
5. There is a positive relationship between the EFQM implementation and business stakeholders' perception.

1.7. Limitation of Research:

This research has distinct boundaries and delimited to Giad Industrial Group; the secondary data are collected from 2 companies; Iron Company and Giad Elsewedy Cables Company, for the years lag 2009 – 2016. The primary data are collected by posing questions to randomly selected employees from three companies of the Group; Giad Trucks Company, Iron Company and Giad Elsewedy Cables Company.

1.8. Previous Studies:

Khogali (2004) studied impacts of EFQM Model on the performance of Giad Industrial Group. He found that; results from customer satisfaction measures showed positive trends for successive 3 years, and he concluded that; "this was reflected as positive impacts on the performance of Giad Industrial Group in terms of increased sales and decreased number of customer complaints".

Dawood (2018) studied the role of the EFQM model in achieving employee results, case study; The Sudan Coinage Company. The researcher found that; (i) There was a statistically significant relationship between performance evaluation and employee results. (ii) There was a statistically significant relationship between motivation and employee results. (iii) A statistically significant relationship between internal communication and employee results. (iv) There is no statistically significant relationship between selection, employment and employee results and (v) There is also no statistically significant relationship between empowerment and employee achievement.

Ismael (2015) studied the impact of implementation of EFQM excellence model on organizations performance, taken Giad as a case study. The study aimed to answer questions, as if EFQM excellence model implementation has good impact on performance of the organization? Through hypotheses and questions: including the impact on systems and procedures, the impact on the organizational culture, the impact on managerial and employees recognition, the impact on design and structure, and the impact on the cost of failure. The study was conducted on SHG Industrial complex as case study for Giad Group, which is an award winner for two years. The test for all questions of the study showed that the majority of employees (over 90%) agreed that the excellence model implementation had good impact on organizations performance. A few of them (less than 5%) demonstrate lack of awareness and dissatisfaction of implementation level of EFQM excellence model. The study concluded that SHG complex need to work hard on organizational culture and internal communication.

Hamid (2015) study aimed to define the effects of implementation approaches of EFQM Excellence Model on business results in Giad Industrial Group (GIG). He selected six business units as a case study he concluded that there were clear deviations in results achieved at Giad Award of Excellence. The results concluded that the workshop approach was deployed with the percentage of 94% of all approaches implemented at GIG. The study also explored that the performance indicators of approaches considered one of the success factors of implementing the EFQM Excellence Model. The recommendations concerning the implementation approach represented by increasing of awareness of the concept of self assessment, the high commitment of leadership, continuous improvement of approach in implementation of EFQM excellence model.

1.9. The Gap between the Study and the Previous Studies:

The previous studies gathering a primary data by examining respondents in the selected companies, in this research we examine mainly secondary data and performance records, we explore what are the tangible benefits of implementing EFQM model to the organization shareholders and stakeholders, we depicted that by comparing

EFQM scores, the organization performance, the business results and achievements in form of production, sales and final net profits. Besides, we examine the stakeholder's perceptions concerning EFQM implementation.

1.10. The Area of Study:

1.10.1. Giad Industrial Group:

Giad Industrial Group, more formally Giad Industrial City, is an industrial city located 50 miles south of Khartoum in Sudan. The Group was established in 1993 and opened in 2000 in accordance with the best international industrial standards. Its facilities include flexibility and ease of adaptation to accommodate the possibilities of work in all types of industries, and supporting of other industries. Since its inception, the Group has focused on the search for what is new, and developed to qualify its human resources to keeping up to date abreast of the continuous industrial and technical development, and add competitive and technical advantages to its products and services. In the field of management its activities include advanced training, computerization systems, human resources development and strategic management activities. The Group has established Research and Development (R & D) Centres based on theoretical and applied scientific principles, thus enabling the Group to provide technical and administrative requirements in various industrial fields.

According to Giad web site (2018), its vision and mission are stated as:

Our vision "regional leadership, world-class standards".

Our mission "we look forward to giving rise to a comprehensive industrial and technological development throughout the country and to lead the process of industrialization in the sub region, by manufacturing products and establishing projects, aiming to serve and promote the national economy by efficiently trained staff".

1.10.2. Giad Methods and Operation Approaches:

Giad is a pioneer company for adoption of quality systems, computerization and strategic management in Sudan; according to Giad home page (2017) the following systems are implemented:

1. EFQM (European Foundation for Quality Management).
2. 5S (Sort, Set in Order, Shine, Standardize and Sustain).
3. 3R (Reduce, Reuse and Recycle).
4. ERP (Enterprise Resource Planning).
5. CRM (Customer Relation Management).
6. TPM (Total Productive Maintenance).
7. OEE (Overall Equipment Effectiveness).
8. ISO 9001 (Quality Management System Requirements).
9. ISO 14001 (Environmental Management System).
10. OHSAS 18001 (Occupational Health and Safety Assessment Series).

According to Khogali (2004) in order to improve the performance of their firms, Giad Industrial Group has launched its Excellence Quality Awards in 2009 by adopting the EFQM Excellence Model as a powerful management framework used to improve the performance of organizations.

1.10.3. Giad Group components:

According to Giad home page (2017) Giad Engineering Industries Group consists of:

1. Group head Quarter.
2. Sector of Metal Industries.
3. Sector of Cars & Trucks Industry.
4. Sector of Industrial Investments.
5. Sector of Technology.
6. Sector of Administration and Services.

CHAPTER TWO

LITERATURE REVIEW

Quality today is becoming a main concern for most organizations in the world. Many reasons are behind the fact that quality now is top priority for organizations, some of which are; markets demand high quality products and services, even high quality alone is not enough; markets also request low cost products. The customer's priority for products is based on volume but also require quality system, changing of product mix, higher levels of customer satisfaction and the increased customers' expectations are focal points derive organizations to implement and adopt quality systems and excellence models. To increase their market share and conquer the market competition organizations should plan and deploy its strategy of quality, besides the other organization goals.

Quality embodies improvement approaches, which guide the quality attentive people to state the existent '*Excellence*' principles as an advanced quality phase. Intended quality assessment, continuous improvements and striving to be the best lead to excellence. In the last decades, many awards and prizes are created around the world to encourage organizations implement quality and excellence.

In the Sudan the Presidency is encouraging total quality and excellence; furthermore, it initiated the Higher Council of Quality and Excellence in 2005. The Council supervises the implementation of total quality and excellence strategy for the public sector. Also it supervises the National Award for Quality and Excellence in the Sudan, which depends largely on the European Foundation for Quality Management (EFQM) model.

This chapter reviews the research background, and provides the reasons for the study; furthermore, the structure of the thesis will be illustrated.

2.1. Definition of Excellence:

In thesaurus excellence is: greatness, merit, perfection, quality, supremacy, fineness, brilliance, distinction...

Vocabulary dictionary defines excellence as "a quality that people really appreciates, because it's so hard to find. Excellence is the quality of excelling, of being truly the best at something".

Excellence is "An essential and distinguishing attribute of something or someone", (ibid).

EFQM (2013) defines excellence as, "Excellence is about doing your best".

Excellence is when people strive to be the best they can be and this applies to organizations as well, (ibid).

2.2. The Evolution of Excellence:

According to module (8) (n.d) "the principles and techniques that we now think of as part of excellence began in the early years of the 20th century, and can be tracked through such stages as: inspection, quality control, process control, quality assurance, total quality management, business excellence". Figure (1:1) demonstrates the development of quality and the evolution of excellence.

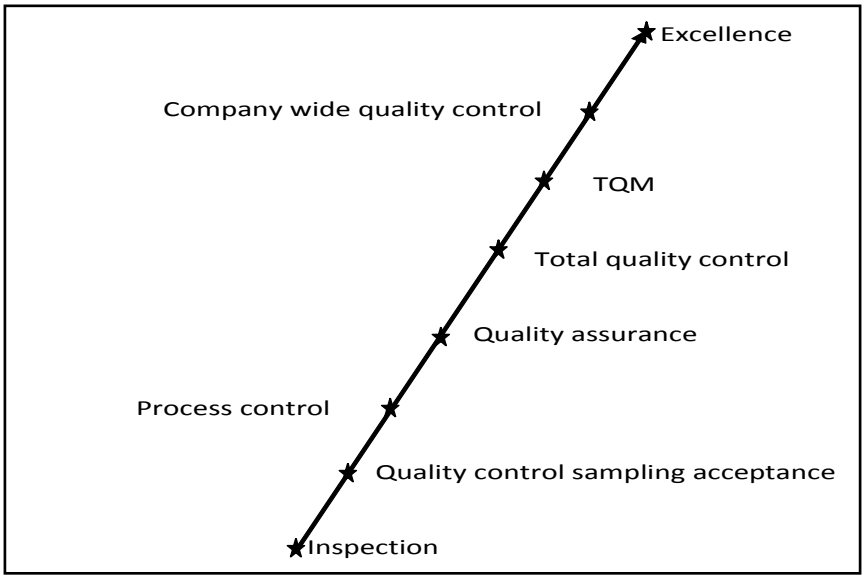

Figure (2:1): Development and evolution of excellence.
Source: (Summarized form module (2) and (8) (n.d)).

2.3. Relation of Excellence to Total Quality Management:

From Figure (1:1) above we can conclude that; excellence is legitimate result of Total Quality Management (TQM) and it is difficult to draw any dividing line between excellence and total quality management. It is found that Deming Prize makes no

reference to excellence as such, but instead it is based on the evaluation of total quality management within an organization. Some literatures mentioned that there is frequently little value in making any distinction between TQM and excellence. However according to module (8) (n.d) a few general points can be made about excellence in relation to TQM; excellence embodies the principles of total quality in that it examines the management and performance of every aspect of how an organization works and what it achieves. Excellence is normally characterized by some form of model that enables an organization's performance and application of total quality principles to be analyzed for effectiveness. Also, excellence requires an organization to demonstrate that its application of these principles is successful, by demonstrating that it achieves continuous improvement and successful performance results in a number of categories.

We can conclude in this regard that; excellence is special total quality management embodies assessing scores and evaluations with fixed boundaries, where organizations apply total quality principles and management that reproduce acceptable business results.

2.4. Types of Excellence:

There are main three types of excellence; operational excellence, process excellence and performance excellence.

Institute of Operational Excellence defines operational excellence as "when each and every employee can see the flow of value to customer, and fix that flow before it breaks down".

Centre for Process Excellence and Innovation defines the process excellence as" superiority in execution of business process, such as product development, manufacturing, supply chain management and services.

Centre for Business Performance Improvement stated that; business performance excellence is achieved when an organization is generating the maximum level of profitability possible given the human, financial, capital and other resources it possessed."

2.5. Definition of Business:

Business Dictionary defines business as an organization or economic system where goods and services are exchanged for one another or for money. Every business requires some form of investment and enough customers to whom its output can be sold on a consistent basis in order to make a profit.

Businesses can be classified to many types based on various categories. For example from ownership point of view they can be privately owned, not-for-profit or state-owned. Also business can be classified according to labour size as large medium and small business.

2.6. Business Performance Indicators:

Parmenter (2007) stated that; there are three types of performance measures: (i) Key result indicators (KRIs) tell you how you have done in a perspective. (ii) Performance indicators (PIs) tell you what to do and, (iii) Key performance indicators (KPIs) tell you what to do to increase performance dramatically.

Business performance indicators are the key financial and non-financial business indicators that are used to measure the organization's operational performance. They help monitor, understand, predict and improve the organization's likely business outcomes. Measures could include performance indicators on: (i) Financial indicators. (ii) Project costs. (iii) Key process performance indicators. (iv) Partner and supplier performance. (v) Technology, information and knowledge, (EFQM, 2013).

2.7. Business Excellence:

Business excellence is often described as outstanding practices in managing the organization and achieving results, all based on a set of fundamental concepts or values. These practices have evolved into models for how a world class organization should operate. Davies (2004), quoted Kanji & Tambi that; "consider business excellence models (including the EFQM Excellence Model) to be special types of Total Quality Management (TQM) models that provide measures of key organizational areas and

demonstrate the contributory effect of those key areas to overall organizational performance".

"Excellent organizations achieve and sustain outstanding levels of performance that meet or exceed the expectations of all their stakeholders" (EFQM, 2013).

2.8. Characteristics of Excellent Organizations:

According to EFQM (2012) and concerning results of customer, people, society and business we can summarize that excellent organizations characterized by the followings:

1. Develop a set of key performance indicators and related outcomes to determine the successful deployment of their strategy and supporting polices, based on the needs and expectations of the relevant stakeholder groups.
2. Set clear targets for key results the 4 criteria, based on the needs and expectations of their business stakeholders, in line with their chosen strategy.
3. Segment results to understand the performance of specific areas of the organization and the experience, needs and expectations of their stakeholders.
4. Demonstrate positive or sustained good results for the 4 criteria over at least 3 years.
5. Clearly understand the underlying reasons and drivers of observed trends and the impact these results will have on other performance indicators and related outcomes.
6. Have confidence in their future performance and results based on their understanding of the cause and effect relationships established.
7. Understand how their key results for the 4 criteria compare to similar organizations and use this data, where relevant, for target setting.

2.9. EFQM Evolution:

Davies (2004) reviewed the history and development of the EFQM model, that; the success of the Baldrige Model (USA) and the Deming prize (Japan) encouraged the formation of the European Foundation for Quality Management (EFQM) in 1988. The 14 founders of EFQM were all Presidents of world-class organizations representing a

number of different markets and were endorsed by the European Commission. The full list of founder organizations was: Bosch, KLM, BT, Nestle, Bull, Olivetti, Ciba-Geigy, Philips, Dassault, Renault, Electrolux, Sulzer, Fiat and Volkswagen.

Paghaleh (2011) quoted Rusjan, Castresana Ferna´ndez-Ortiz, that; EFQM Excellence Model was created as a framework against which applicants for the European Quality Award are judged, and to recognize organizational excellence in European companies. Nowadays, EFQM brings together more than 700 members located in many countries across the world.

The factors that led to EFQM creation were very similar to those that had inspired the Malcolm Baldrige National Quality Award in the US; which is the need to enhance quality and stimulate competitiveness of European companies. EFQM's most important initial task was to establish a European award based on excellence. The success of the Baldrige Award in US encouraged greatly the existence of EFQM, and evolves a confidence that the model would be of great value to business across Europe.

The EFQM Excellence model previously called the European Model for Business Excellence; it was introduced in 1991 with the European Quality Award being awarded for the first time in 1992. From its inception, the adoption of Total Quality Management (TQM) principles has been at the heart of the EFQM vision. The Vision was restated in 2000 as: *"A world in which organizations in Europe excel"*, with the Mission of *"to be the driving force for sustainable excellence in organizations in Europe"* (EFQM, 2013).

According to Business Excellence Module (8) (n.d), in 1996 EFQM extended to include a separate category for public sector organizations, and in 1997 it was further extended to include operational units - significant parts of companies that are not eligible to enter as a business. In 1997 EFQM also launched the European Quality Award for Small and Medium Enterprises (SMEs), for companies with fewer than 250 employees.

The EFQM Excellence Model is updated every four years or so and the fact that it has changed little over the last twelve years would indicate that it would have

provided a reasonable degree of consistency to any organization using it as a basis for its strategy, (Davies, 2004).

2.10. EFQM Excellence Model Components:

According to EFQM (2013) The EFQM Foundation was formed to recognise and promote sustainable success and to provide guidance to those seeking to achieve it. This is realised through a set of three integrated components which comprise the EFQM Excellence Model:

1. The Fundamental Concepts of Excellence: The underlying principles which are the essential foundation of achieving sustainable excellence for any organization.
2. The EFQM Excellence Model: A framework to help organizations convert the Fundamental Concepts and RADAR logic into practice.
3. RADAR logic: A dynamic assessment framework and powerful management tool that provides the backbone to support an organization as it addresses the challenges it must overcome if it is to realise its aspiration to achieve sustainable excellence.

2.10.1. The fundamental concepts of EFQM:

Excellence Fundamental concepts outline the essential foundation for achieving sustainable excellence for any organization. They can be used as the basis to describe the attributes of an excellent organization culture. They also serve as a common language for senior management. Figure (2:1) demonstrates the fundamental concepts which are: Adding Value for Customers, Creating a Sustainable Future, Developing Organizational Capability, Harnessing Creativity & Innovation, Leading with Vision, Inspiration and Integrity, Managing with Agility, Succeeding through the Talent of People and Sustaining Outstanding Results.

Excellent organizations achieve sustained outstanding results that meet both the short and long term needs of their stakeholders, within the context of their operating environment.

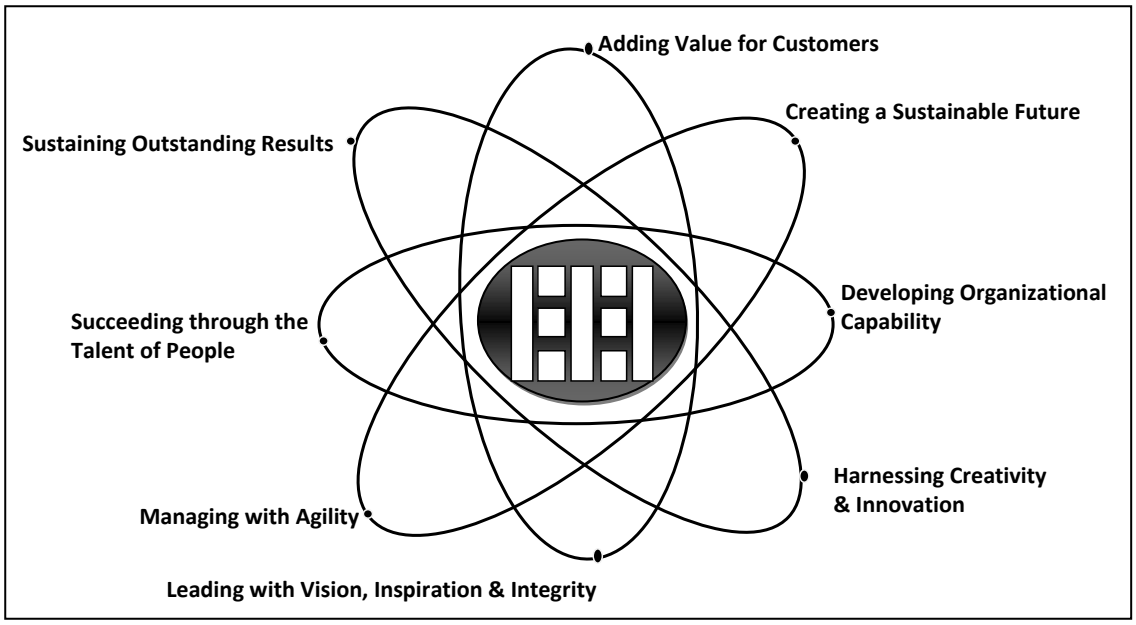

Figure (2:2): EFQM fundamental concepts.
Source: (EFQM, 2012).

2.10.2. EFQM excellence model criteria:

EFQM Excellence Model is a framework to help organizations convert the Fundamental Concepts and RADAR logic into practice.

EFQM Excellence Model is made up of nine elements grouped under five enabler criteria (leadership, policy and strategy, people, partnerships and resources and processes) and four result criteria (people results, customer results, society results and key performance results). The model revised each four years and updated, in version 2012 the key performance results are substituted by the business results. Figure (2.2) demonstrates the model.

The Excellence Model is also used as a tool for comprehensive assessment of a company and its performance. It emphasizes the role of leadership in the organization, its corporate strategy and policy, the impact on employees, as well as resources and partnerships used as basic presumptions of the proper functioning of processes. The outcome of these processes is expressed by a relationship with stakeholders and their relationship to the company, which can be regarded as the results of its core activities.

EFQM Excellence Model provides a holistic tool for assessing how effective you are in developing and delivering a stakeholder focused strategy. The 4 result areas

focus on what's important to the 4 key stakeholder groups. At its simplest level, the Model is a cause and effect diagram. If we want to achieve a different result, we need to change something we do within the organization. And because what is considered excellent today will only be considered as adequate tomorrow, there is a continual improvement loop, feeding back the learning from the results achieved and using creativity and innovation to drive increased value for the stakeholders.

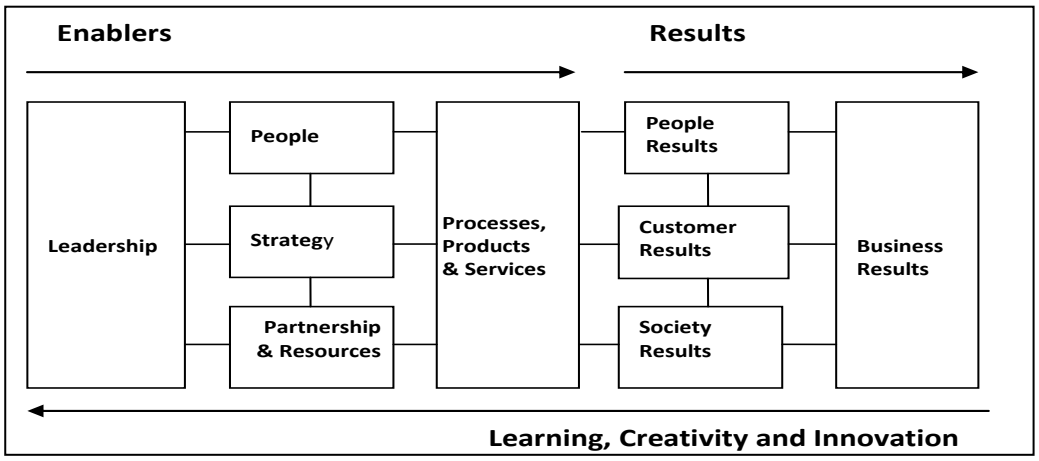

Figure (2.3): EFQM excellence model.
Source: (EFQM, 2013).

2.10.2.1. The enablers:

The ‘Enabler’ criteria cover what an organization does and how it does it. The ‘Results’ criteria cover what an organization achieves, ‘Results’ are caused by ‘Enablers’ and ‘Enablers’ are improved using feedback from ‘Results’. The arrows emphasize the dynamic nature of the Model, showing learning, creativity and innovation helping to improve the Enablers that in. The enablers includes: 'Leadership', 'Strategy', 'People', 'Partnerships and Resources' and 'Processes, Products and Services'**.**

2.10.2.2. The results:

The results includes; Customer Results, People Results, Society Results and Business Results.

2.10.3. RADAR logic:

According to EFQM (2012) the RADAR logic is a dynamic assessment framework and powerful management tool that provides a structured approach to questioning the performance of an organization. It also supports the scoring mechanism

behind the EFQM Excellence Award and other recognition or assessment schemes and can help to lead change and manage improvement projects in an organization. At the highest level RADAR logic states that an organization should:

1. Determine the 'Results' it is aiming to achieve as part of its strategy.
2. Plan and develop an integrated set of sound 'Approaches' to deliver the required results both now and in the future.
3. 'Deploy' the approaches in a systematic way to ensure implementation.
4. 'Assess and Refine' the deployed approaches based on monitoring and analysis of the results achieved and on-going learning activities.

To help support robust analysis, the RADAR elements can be broken down into a series of attributes, shown in Figure (2:3) below.

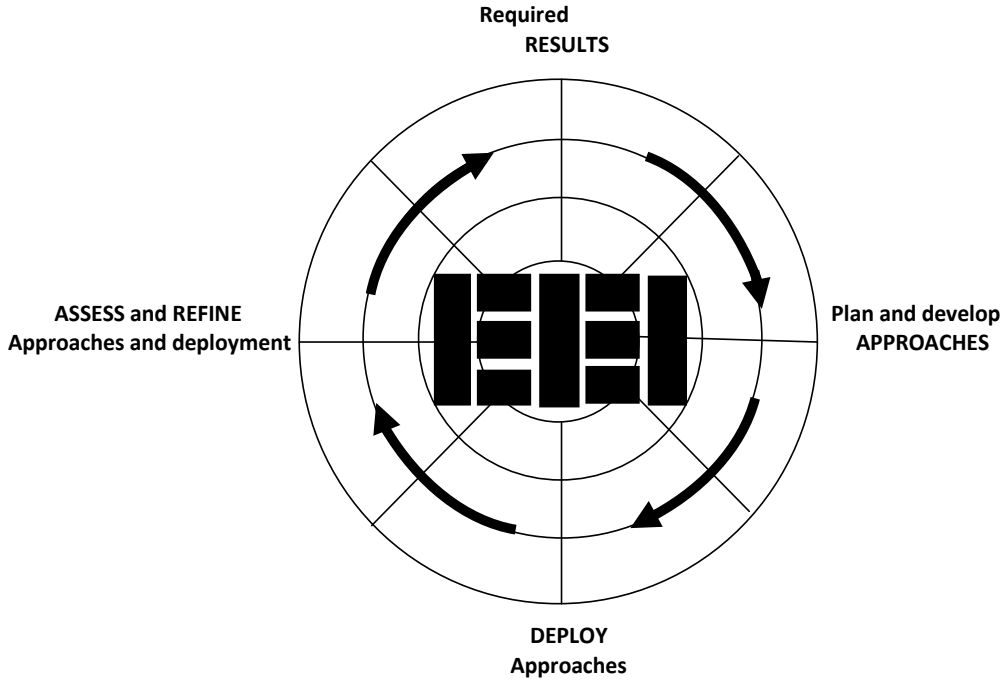

Figure (2.4): The RADAR elements.
Source: (EFQM, 2012).

2.11. Self-assessment:

EFQM definition of organizational (Performance) assessment is a comprehensive, systematic and regular view of an organization's activities and results referenced against EFQM excellence model. The assessment process allows the organization to discern clearly its strengths and areas in which improvements can be

made and culminates in planned improvement actions that are then monitored for progress.

As the definition above makes clear, the primary purpose of undertaking assessment should be to drive improvement. Furthermore, to be successful it must be linked to other management processes within the organization, primarily the strategy development and business planning processes.

2.11.1. Benefits of self-assessment:

1. Providing a highly structured, fact-based technique to identifying and assessing your organization's strengths and areas for improvement and measuring its progress periodically.
2. Improving the development of your strategy and business plan.
3. Creating a common language and conceptual framework for the way you manage and improve your organization.
4. Educating people in your organization on the Fundamental Concepts of Excellence and how they relate to their responsibilities. Developing the management skills of staff.
5. Involving people at all levels and in all units process improvement.
6. Assessing, in a coherent manner, the organization at a macro and/or micro level.
7. Identifying and facilitating the sharing of your “good practice” within the organization.
8. Facilitating comparisons with other organization, of a similar or diverse nature, using a set of criteria that is widely accepted across Europe and beyond.
9. Integrating the various improvement initiatives into your normal operations.
10. Providing opportunities to recognize both progress and outstanding levels of achievement through internal awards.
11. Preparing the organization before it applies for the EFQM Excellence Award or a national or regional award of a similar nature.

2.11.2. The generic 8-steps process of self-assessment:

Step1 – Gain & retain management commitment.

Step 2 – Develop and deploy the communications strategy.

Step 3 – Plan for self-assessment.

Step 4 – Select and train people directly involved in the process.

Step 5 – Conduct self-assessment.

Step 6 – Consider outcomes & priorities.

Step 7 – Establish & implement.

Step 8 – Monitor action plan progress and review the self-assessment process.

2.12. Benefits of EFQM Excellence Model Implementation:

Elsadig (2014) mentioned that; use of EFQM derived general and specific benefits for the organizations. The general benefits of using EFQM Model are the following:

- Satisfied and loyal customers.
- Successful leaders.
- A common sense of purpose throughout the organization.
- Constant, well managed change.
- Engaged and motivated people and other stakeholders.
- An upward flow of ideas.
- Efficient and effective use of data.
- Efficient and effective operation.
- Pride and the desire that drives further improvement.
- Minimal fire-fighting / recurring problems.
- Innovation is the norm.
- Excellent results, including good financial performance.

The specific benefits of using the EFQM Model are summarized in the followings:

- Reactive to change in the environment.
- Providing a marketing focus.

- Being a means of achieving a top quality performance in all areas of the organization.
- Providing operating procedures for all staff; Allowing for the review of organizational self-assessment performance through providing a competitive weapon via a quality approach.
- Future Focus.
- Key Results.
- Innovation.
- Sustainability.

2.13. EFQM and the Baldrige Criteria Similarities:

According to Business Excellence Module (8) (n.d), assessment and scoring systems associated with the EFQM Excellence Model and the Baldrige Criteria for Performance Excellence have many common similarities as excellence assessing models; both enable an assessment of strengths and improvement opportunities (or areas for improvement) for the organization as a whole and for each separate sub-criterion and criterion-part within the model as it relates to the organization. Both assign a total score to the organization as points out of 1000. EFQM and Baldrige Criteria models divide their main criteria into enablers and results, with separate scoring guidelines assigned to each category. Both assign different weightings to different criteria and sub-criteria, reflecting the relative importance of these aspects of organizational excellence. Both consider different aspects, or elements, of enablers and results to identify strengths and improvement opportunities.

The basic principle for scoring is that, when an organization's performance improves over time, their score against the Model will increase. 50% of the points available are allocated to the Enablers and 50% are allocated to the results. This is to ensure the organization has the capability to sustain this performance into the future.

EFQM 'Customers results' carries the highest percentage of scoring besides the 'Business results'. Because customer satisfaction is the cornerstone of any quality in the organization and the successful customer results is a factor that assure the organization's

future. EFQM Excellence Model uses a principle known as RADAR to explain the logic of its assessment and scoring mechanism. RADAR is based on the familiar Plan-Do-Check-Act principle. Figure (2:4) demonstrates EFQM guidance points (1000) distributions.

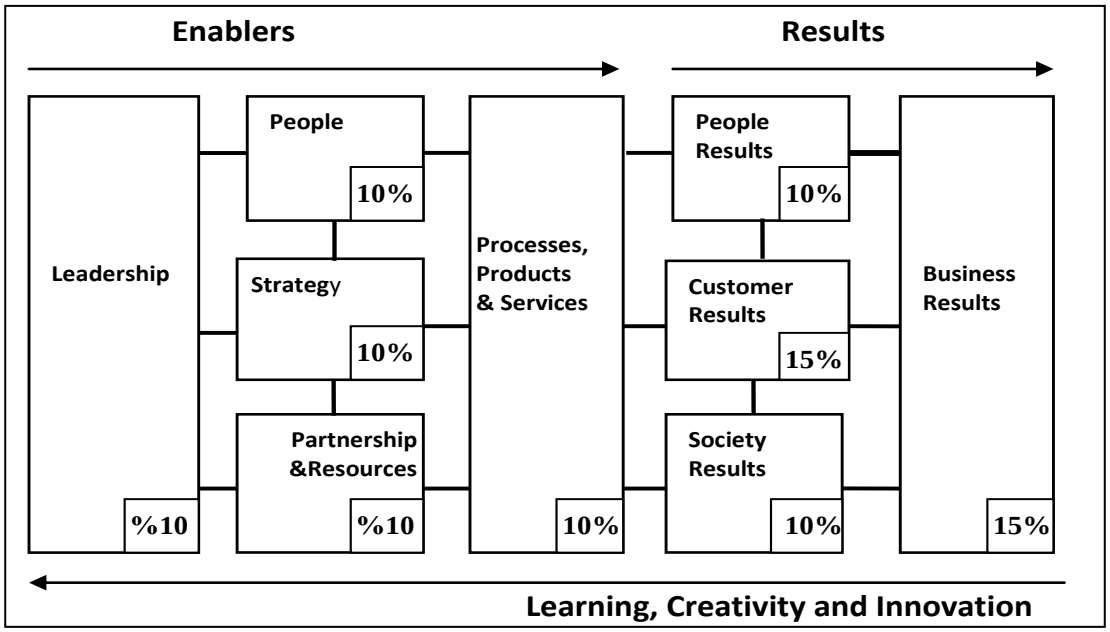

Figure (2:5): EFQM guidance points (1000) distributions.
Source: (EFQM, 2012).

2.14. Quality and Excellence in Sudan:

The quality and excellence models in Sudan are adopted very recently. The excellence assessment in Sudan is based mainly on EFQM excellence models. The followings are summarized and translated from interviews with the head of the 'Quality and Excellence Centre' and the Symposium of Total Quality as Excellence Route, (Friendship Palace, Mar. 2015).

2.14.1. Sudan Higher Council of Quality and Excellence:

The Higher Council of Quality and Excellence in Sudan is created in 2005, and governed under the presidency of the country. It composed of the president as a head, and the membership of the vice president, the ministers of the economic sector, the ministers of mastery, ministers of the private sector and the minister of the industry. In 2010 the council subordinates under the ministry of human resources, and in 2015 the council was subordinates under the cabinet.

2.14.2. Higher Council of Quality and Excellence proficiency:

The council was initiated to lead quality and excellence revolution in Sudan, with aim to expertise in the followings:

1. Supervise the implementation of total quality and excellence strategy for the public sector.
2. Preview the general quality policies and decide the implementation mechanism.
3. Deployment of a sustainable quality culture among organizations.
4. Supervision of the Presidency National Award for quality and excellence in Sudan.
5. Dictate the participation in Presidency Award for quality and excellence for all ministries and public institutions.

2.14.3. The strategic goals Higher Council of Quality and Excellence:

The strategic goals of the Award in Sudan can be summarized in the followings:

1. Manage the change process towards enlightened adoption of quality and excellence concepts and approaches for both private and public sector.
2. Developing and improving the public sector through the adoption and deployment of the international criterion for institutional excellence.
3. Determination of the strengths, improvement opportunities and institutional development areas of the organizations and change them into initiatives and schemes.
4. Acknowledge the outstanding persons and institutions in the area of innovation, creation and excellence.
5. Concentrate the efforts on human resources investments to improve skills for valuable occupational values.

2.14.4. Sudan National Award for Quality and Excellence:

The goals of the Sudan National Award for quality and excellence are summarized in the followings:

1. Promotion and control industrial sector development and support the internal and external Sudan trade.
2. Explore institutions achievements of quality systems.

3. Encourage the organizations provision products and services at high quality standards.
4. Improve organizations efficiency to fulfil customers' requirements.
5. Realization of the organizations financial and operational expectations.

CHAPTER THREE

METHODOLOGY

3.1. Introduction:

One of the advantages of the scientific research is to lead people to improve and progress in some fields of life. New products, new facts, new concepts and new ways of doing things are being found due to the rising research in the physical, the biological, the social and the psychological fields.

This chapter includes the research methodology of the dissertation. In more details, in this part of the research I would outline the research strategy, the research method, the research approach, the methods of data collection, determination of the population, sampling, the type of data analysis, and the research limitations; more specifically, the contents of this chapter will describe what was done, how it was done and, very importantly why it was done.

Research methodology is the specific procedures or techniques used to identify, select, process, and analyze information about a topic. In research, the methodology allows the reader to critically evaluate a study's overall validity and reliability, libguides (n.d). Thus the methodology is the overall approach to the research process. This is not to be confused with the research methods which are the various means by which data can be collected and analyzed (Hussey & Hussey, 1997). Method is simply a research tool, a component of research, for example, a qualitative method such as interviews. Methodology is the justification for using a particular research method.

3.2. Research Design and Methods:

According to (Herbst, 2004) types of research methods can be broadly divided into two; quantitative and qualitative categories. Quantitative research “describes, infers, and resolves problems using numbers. Emphasis is placed on the collection of numerical data, the summary of those data and the drawing of inferences from the data”. In social sciences, “quantitative research refers to the systematic empirical investigation of quantitative properties and phenomena and their relationships”. The objective of

quantitative research is to develop and employ mathematical models, theories or hypothesis pertaining to phenomena. Quantitative can also be called Analytical Research.

Qualitative research presents a non-quantitative type of analysis. Qualitative research is collecting, analyzing and interpreting data by observing what people do and say. It refers to the meanings, definitions, characteristics, symbols, metaphors, and description of things. Qualitative research is much more subjective and uses very different methods of collecting information, mainly individual, in-depth interviews and focus groups. Qualitative research based on words, feelings, emotions, sounds and other non-numerical and unquantifiable elements. It has been noted that "information is considered qualitative in nature if it cannot be analysed by means of mathematical techniques. This characteristic may also mean that an incident does not take place often enough to allow reliable data to be collected".

Yin (1994) argues that there are three main purposes of research; exploratory, descriptive or explanatory and five main research strategies; experiment, survey, archival analysis, history and case study. He then goes on to describe three conditions which need to be considered in order to distinguish the most appropriate research strategy to be employed. These three conditions are; (a) The type of research question posed. (b) The extent of control an investigator has over actual behavioural events. (c) The degree of focus on contemporary as opposed to historical events.

Research methods can be carried and are associated with different kinds of research design. The design represents a structure that guides the execution of the research method and the analysis of the data. Thus a research design provides a framework for the collection and analysis of data.

The design will be used in this research is a case study design. According to Bryman and Bell (2007) the most common use of the term (case study) is associates with a location, such as a work place or organization.

YIN (1994) stated that; "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries

between phenomenon and context are not clearly evident. In other words, you would use the case study method because you deliberately wanted to cover contextual conditions - believing that they might be highly pertinent to your phenomenon of study".

A research method is simply a technique for collecting data. It can involve a specific instrument, such as a self-completion questionnaire or structured interview schedule, or participant observation whereby the researcher listens to and watches others, (Bryman and Bell, 2007).

3.3. Data Collection and Sources:

3.3.1. Data collection:

Data can be defined as a systematic record of a particular quantity. It is the different values of that quantity represented together in a set. It is a collection of facts and figures to be used for a specific purpose such as a survey or analysis. When data is arranged in an organized form can be called information.

Depending on the source, data can classify as primary or secondary data. Primary data is data that is collected by a researcher from first-hand sources. It is collected with the research project in mind, directly from primary sources. The primary data can be collected by using the following methods, which can be used to collect both the qualitative and quantitative data; Interview Method, Delphi Technique, Projective Techniques and Questionnaire Method**.** Questionnaire is the most evident method of data collection, which is comprised of a set of questions related to the research problem. This method is very convenient in case the data are to be collected from the diverse population. It mainly includes the printed set of questions.

According to Bertram (n.d) types of survey questions are open-ended, or closed – fixed response. The closed-fixed or close-ended are either; Yes/No or True/ False questions, multiple choice, rating scale or ranking questions. In closed-fixed response the respondents are required to answer on the basis of their knowledge and experience with the issue concerned.

In this research we prefer the closed-repose rating scales questions using Likert scale; Bertram (n.d) concluded that Likert is 'A psychometric response scale primarily used in questionnaires to obtain participant's preferences or degree of agreement with a statement or set of statements. Likert scales are a non-comparative scaling technique and are uni-dimensional (only measure as single trait) in nature. Respondents are asked to indicate their level of agreement with a given statement by way of an ordinal scale. Likert is commonly seen as a 5-point scale ranging from "Strongly Disagree" on one end to "Strongly Agree" on the other with "Neither Agree nor Disagree" in the middle; Likert Scale have some strengths like it is simple to construct, likely to produce a highly reliable scale, and easy to read and complete for participants

Each specific question or "item" can have its response analyzed separately, or have it summed with other related items to create a score for a group of statements. This is also why Likert scales are sometimes called summative scales.

Secondary data refers to data which is collected by someone who is someone other than the user. Common sources of secondary data for social science include censuses, information collected by government departments, organizational records and data that was originally collected for other research purposes. Secondary data comes from a source other than the researcher. Also secondary data can be defined as the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable i.e. time saving, than the primary data and also may be available when primary data cannot be obtained at all. Also it provides a basis for comparison for the data that is collected by the researcher.

The aims of this research are; (1) to study what are the impacts of EFQM model implementation on business performance, and (2) how the implementation of EFQM model affects the financial and non-financial results of the selected organizations. Those 2 points constitute the research main questions. Accordingly, in this study we use a mixed methods and data from a multiple sources as (Willar, 2012) advised. This research is a descriptive study which emphasizes the study of a situation or problem in order to explain the relationships between variables, using two methodologies;

qualitative and quantitative; as collecting data by using a mixed sources. First a questionnaire is used to collect a primary data, to analyze the perception of the stakeholders about the EFQM implementation and its effect to answer research question (1). Appendix (1) shows the questionnaire. In this study the researcher examined 68 respondents from three companies in Giad group which constitute the sample.

Secondly, the other is the secondary source of data which contains financial performance of the companies, including production, profitability, and market share through a lag of time, to answer research question (2). Based on research objectives and questions, quantitative and qualitative approaches will be employed to collect the data. Primary and secondary data including cross sectional and time series data will be collected. The primary data will be collected by direct interviewing respondents through a field survey using a structured questionnaire to answer the qualitative questions concerning stakeholders' perceptions and the other impacts of EFQM model implementation within the case study, this will be done similar to Ismael (2015). The secondary data will be collected from the published and unpublished sources within the case study to answer the financial and non-financial results concerning profitability and the volume of products and/or services delivered.

Willar (2012) reporting Sekaran and Bougie that; collecting data using a multitude of methods and from multiple sources lends rigor to research and can potentially reduce potential bias associated with some data collection methods.

3.3.2. The population of the study:

According to Hassan (n.d) a research population is generally a large collection of individuals or objects that is the main focus of a scientific query. It is for the benefit of the population that researches are done. However, due to the large sizes of populations, researchers often cannot test every individual in the population because it is too expensive and time-consuming. This is the reason why researchers rely on sampling techniques.

A research population is also known as a well-defined collection of individuals or objects known to have similar characteristics. All individuals or objects within a

certain population usually have a common, binding characteristic or trait. The population is either a target population or accessible population.

3.3.3. Target population:

Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions. The target population usually has varying characteristics and it is also known as the theoretical population.

In this research the target population is all internal customers in Giad Group for the primary data, and all companies in the Group for the secondary data.

3.3.4. Accessible population:

The accessible population is the population in research to which the researchers can apply their conclusions. This population is a subset of the target population and is also known as the study population. It is from the accessible population that researchers draw their samples.

The accessible population in this research are the white collar persons, in four companies in Giad Group; The Iron Company, Giad Trucks Company, Giad Elsewedy Cables Company and Giad Pipes Company and those constitute the case study of the research.

3.3.5. The sample of the study:

In research terms a sample is a group of people, objects, or items that are taken from a larger population for measurement. The sample should be representative of the population to ensure that we can generalise the findings from the research sample to the population as a whole.

Sampling is the process of selecting a representative group from the population under study. The target population is the total group of individuals from which the sample might be drawn. A sample is the group of people who take part in the investigation and referred to as “participants”.

3.3.6. Sampling techniques:

There are lot of sampling techniques which are grouped into two categories as, Probability Sampling and Non- Probability Sampling.

3.3.7. Probability sampling:

This Sampling technique uses randomization to make sure that every element of the population gets an equal chance to be part of the selected sample. It's alternatively known as random sampling which includes; Simple Random Sampling, Stratified sampling, Systematic sampling, Cluster Sampling and Multi stage Sampling.

In this research we use simple random sampling; we draw randomly 25% of each company population, and provide equal chance for any participant to be involved in the questionnaire. Regarding the secondary data, the General Administration of the Group selects the tested companies, depending on the availability of the data.

3.3.8. Non-probability sampling:

It does not rely on randomization. This technique is more reliant on the researcher's ability to select elements for a sample. Outcome of sampling might be biased and makes difficult for all the elements of population to be part of the sample equally. This type of sampling is also known as non-random sampling which includes; Convenience Sampling, Purposive Sampling, Quota Sampling and Referral /Snowball Sampling.

3.4. Data analysis strategies:

SPSS technique can be used to test the primary and the secondary data, to show frequencies and correlations. Graphical and tabular analysis will be used for the comparative features of the selected companies.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction:

In this chapter the results and the analysis of the field survey which initiated from the data will be stated and discussed. Concerning the primary data, the questionnaire will be analyzed supposing the respondents from the three companies; The Iron Company, Giad Trucks Company, Giad Elsewedy Cables Company as a one sample. Then, concerning the secondary data we will analyze the data for the two case studies separately; the Iron Company and Giad Elsewedy Cables Company. The results will be discussed at the end of the chapter.

4.2. Primary Data Results:

4.2.1. Frequencies of respondent's experience characteristics:

The characteristics include respondents' years of experience (in position) within the company. Concerning Iron Company Appendix (2) Table (A) attached shows that; only 4% are new company comers spent less than 4 years, 36% of the respondents spent 4- 9 years in position, 32% of the respondents are 9 -13 years experience and 28% spent more than 13 years in their position; this means about 60% of the respondents spent more than 9 years in position, and can give reliable answers.

Appendix (2) Table (B) attached shows that respondents examined concerning Trucks Company, 30% spent less than 4 years, 10% are 9 -13 years experience, and 55% are more than 13 years experience, which means 65% are above 9 years experience,

Concerning Giad Elsewedy Cables Company; Appendix (2), Table (C) attached shows that 18% of the respondents are 9 -13 years experience in the company, and 72% spent more than 13 years in their position; this means about 60% of the respondents are well familiar with their position, and can give close reliable opinions and questionnaire answers.

4.2.2. Frequencies of respondent's answers to the questionnaire questions (5.1) – (5.16):

In questions (5.1) to (5.16) ordinal scales were used. According to (Hamid, 2015); ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers (1, 2, 3, 4, and 5) assigned to the importance of effective criteria of perception, they do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels based on Likert scale. Table (4.1) shows the items and the scale based on Likert scale used in the questionnaire.

Table (4.1): Likert scale to determine the perception of the respondents:

Item	Strongly agree	Agree	Indifferent	Disagree	Strongly Disagree
Scale	5	4	3	2	1

Source: (Brown, 2010).

Table (4.2) shows summary analysis of the questionnaire, respondents' answers to question (5.1) to (5.16). As Robins concluded Bertram "Each specific question (or "item") can have its response analyzed separately, or have it summed with other related items to create a score for a group of statements. This is also why Likert scales are sometimes called summative scales.

In this study, when we sum strongly agree and agree answers to constitute agree percentage, and sum strongly disagree and disagree to constitute disagree percentage; we find that approximately all the results shows agree rank. Appendix (3) Tables (A) to (P) attached show the details of frequencies analyses for the questions (5.1) to (5.16). On the average about 87% are agree, 10% indifferent and 3% are disagree. It is clear that, percentages of agreements are around 90^{th} or 60^{th}. The agreement peek and exceeded 90% for questions embodied a theoretical sense or meaning; e.g. question (5.1), (the use of EFQM benefits the company in deployment of quality culture) the agreement degree is about 95%, (the use of EFQM improves the efficiency of the company agreement is 96%). While those questions embodied facts and more specific performances the agreements are around the 80^{th} – 60^{th} ; e.g. (the use of EFQM led to

production increase of the company) the degree of agreement is about 80% (the use of EFQM led to increase the chance of new contracts and business) the agreement percentage is about 81%. (The use of EFQM led to decrease of total cost) the agreement is about 67%.

Table (4.2): Summary of frequencies of respondents answers to questions (5.1) to (5.16):

Q. No	The Field	Agree %	Indifferent %	Disagree %	Rank
5.1	The use of EFQM benefited the company in deployment of Quality culture.	95	2	3	Agree
5.2	The use of EFQM improved the performance indicators between the planed and the implemented processes	93	6	1	Agree
5.3	The use of EFQM improved the efficiency of the company	96	4	0	Agree
5.4	The use of EFQM benefited the company in opening new markets	75	18	7	Agree
5.5	The use of EFQM increased production of the company	80	16	4	Agree
5.6	The use of EFQM increased market share.	80	13	7	Agree
5.7	The use of EFQM led to improvement of product quality	97	3	0	Agree
5.8	The use of EFQM improved company reputation among its labour	88	9	3	Agree
5.9	The use of EFQM improved company reputation among external customers.	84	13	3	Agree
5.10	The use of EFQM decreased wastes in the company	91	7	2	Agree
5.11	The use of EFQM decreased company total cost	67	30	3	Agree
5.12	The use of EFQM increased the chance of new contracts and business	81	15	4	Agree
5.13	The use of EFQM means the company respond to customers' requirements and expectation	94	6	0	Agree
5.14	EFQM scores were in line with company goals	86	12	2	Agree
5.15	The use of EFQM led us to continuous improvements of the company	94	4	2	Agree
5.16	The use of EFQM increase my commitment to quality	96	4	0	Agree
Average		87	10	3	Agree

Source: Summarized by the author from Appendix (3) Tables (A) to (P).

4.3. Secondary Data Analysis and Results:

4.3.1. Iron Company:

Appendix (4) Table (A) shows Iron Company EFQM criteria scores. Table (4.3) shows Iron Company total EFQM scores, sales, net profits and market share for the years (2009 -2016). To remove the effect of inflation from the nominal values of sales and net profits they should be deflated by the consumer price index (CPI), then, the deflated true values of sales and net profits should be analysed and tested across the total EFQM scores of the selected companies. Table (4.4) shows deflated sales and deflated net profits, Appendix (5) attached show monthly CPI (2005 - 2016).

Table (4.5) summarized correlation results shown in Tables (4.6), (4.7) and (4.8). Figures (4.1), (4.2) and (4.3) accompanied show the scatter plots of the correlations.

Concerning Iron Company, Pearson correlation between total EFQM scores and deflated sales is about (-0.152), the correlation between scores and net deflated profits is about (0.218) and between the scores and the market share is about (-0.003). It is clear that, there are no significant correlations between the EFQM scores and the studied parameters; deflated sales, net deflated profits and market shares the accompanied scatter plots clarifies the picture as the points are wide dispersed.

Table (4.9) shows Iron Company percentage increase or decrease of the total EFQM scores and the accompanied parameters for years (2009 -2016). The year 2009 is a base year; EFQM total scores is 95.5, deflated sales is about 0.597 million SDG and the net deflated profits is about (-0.035) million SDG. In the years 2010, 2011, 2012, 2014, 2015 and 2016, all parameters viewed a fluctuated trends; total scores increased by about 24%, 64%, (-29%), 127%, (-21%), and 23% respectively. For the same set of years the deflated sales increased by about (-40%), 180%, 23%, (-54%), 18%, and (-11%) respectively. The net deflated profits increased by about (-113%), 2280%, (-57%), (-70%), (-57%), and 522% respectively, (no records for 2013). Concerning the market share, the available records are about the years 2011, 2012, 2014, 2015 and 2016, the market share increased by about 1%, 5%, (-6%) and 0.0% respectively.

Table (4.10) and Figure (4.4), show that; during the lag time 2009 the begging year and 2016 (supposed to be year of maturity), we can remark that about 219% points increases of EFQM scores was accompanied by about 1% increase of deflated sales and 207% increase of deflated profits (100% scores increase accompanied by about 0.45% and 95% increase of deflated sales and net deflated profits respectively).

Figures (4.4), (4.5), and (4.6), show a remarked sort of relation and consistent trends between the total scores and the studied parameters. As EFQM scores increase or decrease we remark increase or decrease of the other parameters, although it is not synchronized and not side by side.

Table (4.3): Iron Company total EFQM scores, sales, net profits and market share (2009-2016):

Year	Total points	Sales (million SDG)	Net profits	Market share
2009	95.5	75.9	-4.4	
2010	118.8	51.22	0.66	21%
2011	195.25	169.61	18.55	22%
2012	138.25	282.38	10.74	27%
2014	313.8	243	6	21%
2015	248	335	3	21%
2016	305	350	22	

Source: Company feedback reports, 2011, 2013 and 2017

Table (4.4): Iron Company total EFQM scores, CPI, deflated sales and deflated net profits (2009-2016):

Year	Sales (million SDG)	Net profits (million SDG)	CPI	Deflated sales	Deflated profits
2009	75.9	-4.4	127.15	0.597	-0.03
2010	51.22	0.66	143.65	0.357	0.00
2011	169.61	18.55	169.62	1.000	0.11
2012	282.38	10.74	229.98	1.228	0.05
2014	243	6	429.84	0.565	0.01
2015	335	3	502.53	0.667	0.01
2016	350	22	591.73	0.591	0.04

Source: Calculated from Table (4.3) and Appendix (5).

Table (4.5): Summery of Iron Company Pearson correlations:

Company		EFQM scores	Deflated sales	Deflated net profits	Market share
Iron company	EFQM scores	1	-0.152	0.218	-0.003

Source: Summarized from Tables (4.24 - 4.26).

Table (4.6): Iron Company EFQM scores and deflated sales Pearson correlations:

		EFQM scores	Deflated sales
EFQM scores	Pearson Correlation	1	-.152
	Sig. (2-tailed)		.745
	N	7	7
Deflated sales	Pearson Correlation	-.152	1
	Sig. (2-tailed)	.745	
	N	7	7

Source: Analyzed from secondary data by the author.

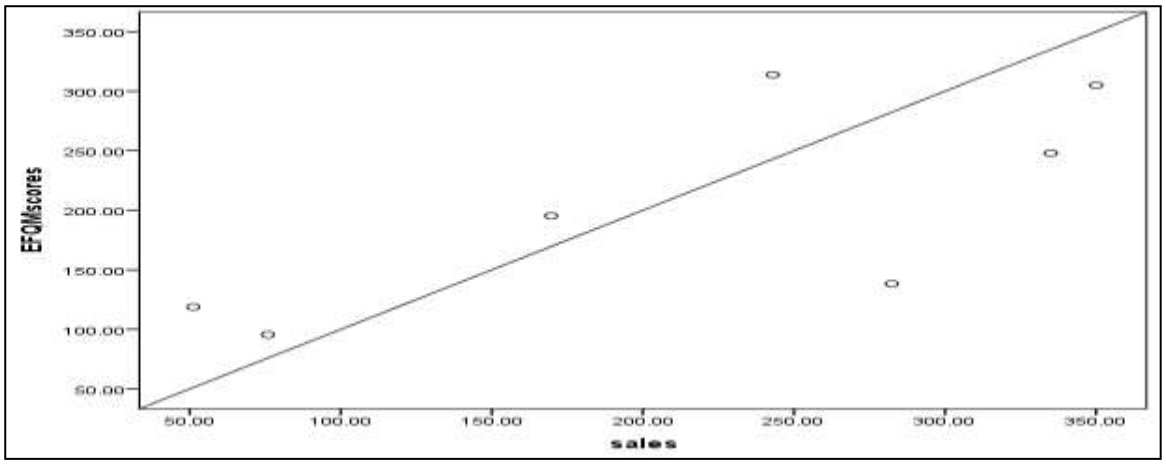

Figure (4.1): Scatter plot of EFQM scores and Iron Company deflated sales.
Source: Drawn from Table (4.6).

Table (4.7): Iron Company EFQM scores and net deflated profits Pearson correlations:

		EFQM scores	Deflated profits
EFQM scores	Pearson Correlation	1	.218
	Sig. (2-tailed)		.639
	N	7	7
Deflated profits	Pearson Correlation	.218	1
	Sig. (2-tailed)	.639	
	N	7	7

Source: Analyzed from Secondary Data by the Author.

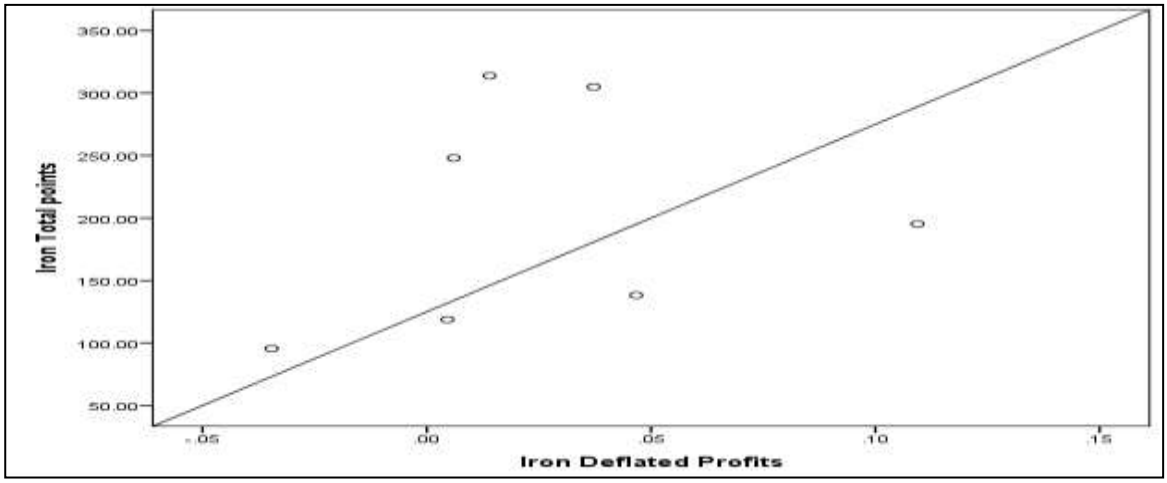

Figure (4.2): Scatter plot of EFQM scores and Iron Company net deflated profits.
Source: Drawn from Table (4.7).

Table (4.8): Iron Company EFQM scores and market share Pearson Correlations:

		EFQM scores	Market share
EFQM scores	Pearson Correlation	1	-.003
	Sig. (2-tailed)		.996
	N	7	6
Market share	Pearson Correlation	-.003	1
	Sig. (2-tailed)	.996	
	N	6	6

Source: Analyzed from secondary data by the author.

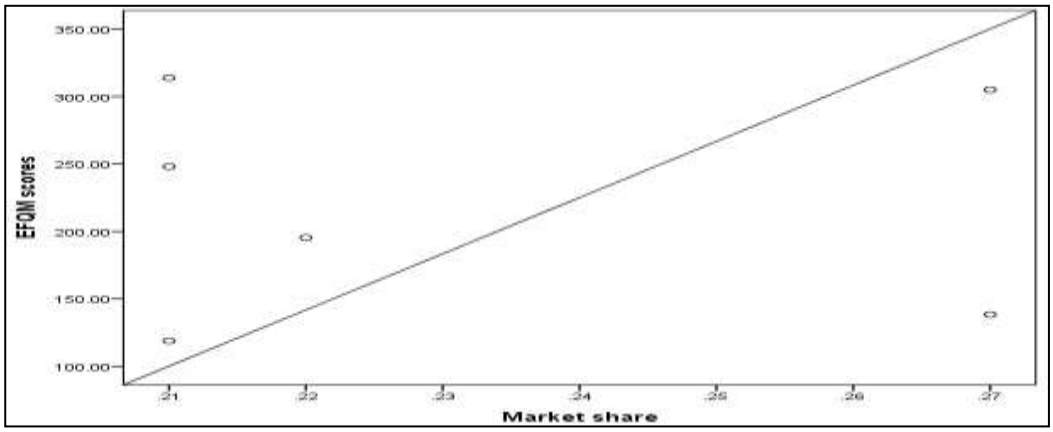

Figure (4.3): Scatter plot of EFQM scores and Iron Company market share.
Source: Drawn from Table (4.8).

Table (4.9): Iron Company percentage increase or decrease of the total points and the accompanied parameters:

Year	Total scores			Sales					Net profits					Market share	
	Values	(±)	(±)%	Million SDG	CPI	Deflated sales	(±)	(±)%	Million SDG	CPI	Deflated profits	(±)	(±)%	Value	(±)%
2009	95.5			75.9	127.15	0.597			0.66	127.15	-0.03				
2010	118.8	23.3	24	51.22	143.65	0.357	-0.240	-40	18.55	143.65	0.00	0.04	-113	21%	
2011	195.25	76.45	64	169.61	169.62	1.000	0.643	180	10.74	169.62	0.11	0.10	2280	22%	1%
2012	138.25	-57	-29	282.38	229.98	1.228	0.228	23	6	229.98	0.05	-0.06	-57	27%	5%
2014	313.8	175.55	127	243	429.84	0.565	-0.663	-54	3	429.84	0.01	-0.03	-70	21%	-6%
2015	248	-65.8	-21	335	502.53	0.667	0.101	18	22	502.53	0.01	-0.01	-57	21%	0%
2016	305	57	23	350	591.73	0.591	-0.075	-11	-4.4	591.73	0.04	0.03	523		

Source: Calculate from Table (4.3).

Table (4.10) Iron Company EFQM scores and the accompanied parameters percentage increase or decrease from the beginning to the maturity:

Year	Total scores			Deflated Sales (million SDG)			Deflated Profits (million SDG)		
	values	(±)	(±) %	values	(±)	(±) %	values	(±)	(±) %
2009	95.5			0.597			-0.03		
2016	305	209.5	219%	0.591	-0.006	-1.0%	0.04	0.07	207%

Source: Calculate from Table (4.3).

4.3.2. Iron Company graphical comparisons:

The following are Iron Company graphical comparisons between the scores, deflated sales, deflated profits and market share.

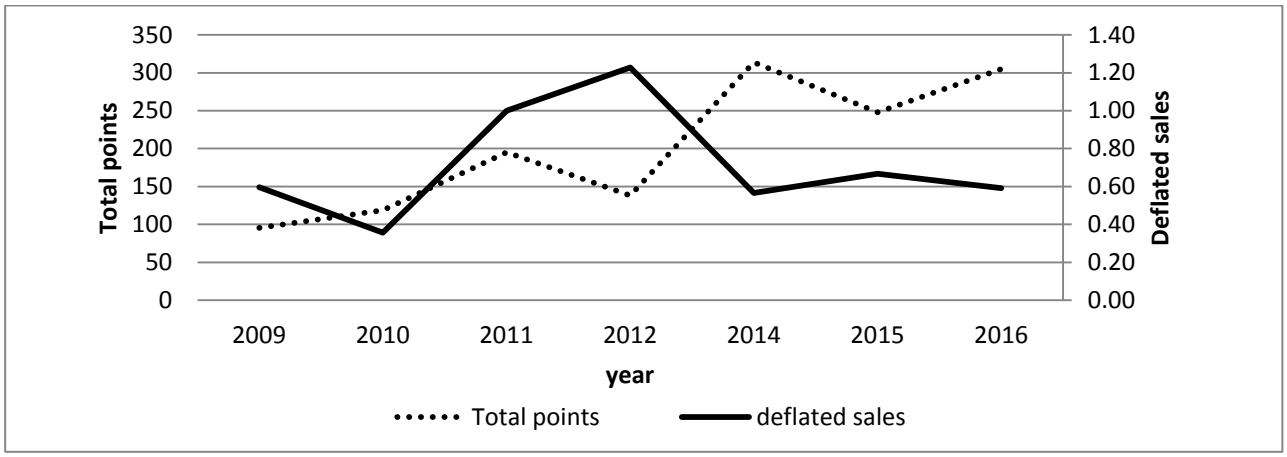

Figure (4.4): Iron Company; trends of total EFQM scores and deflated sales (Million SDG).
Source: Drawn from Table (4.9).

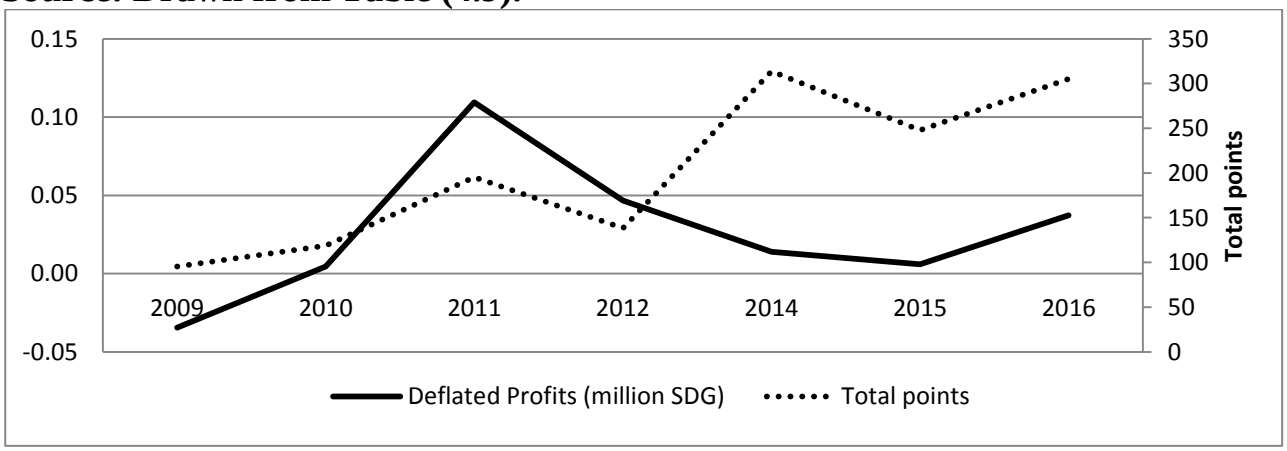

Figure (4.5): Iron Company; trends of total EFQM scores and net deflated profits (Million SDG)
Source: Drawn from Table (4.9).

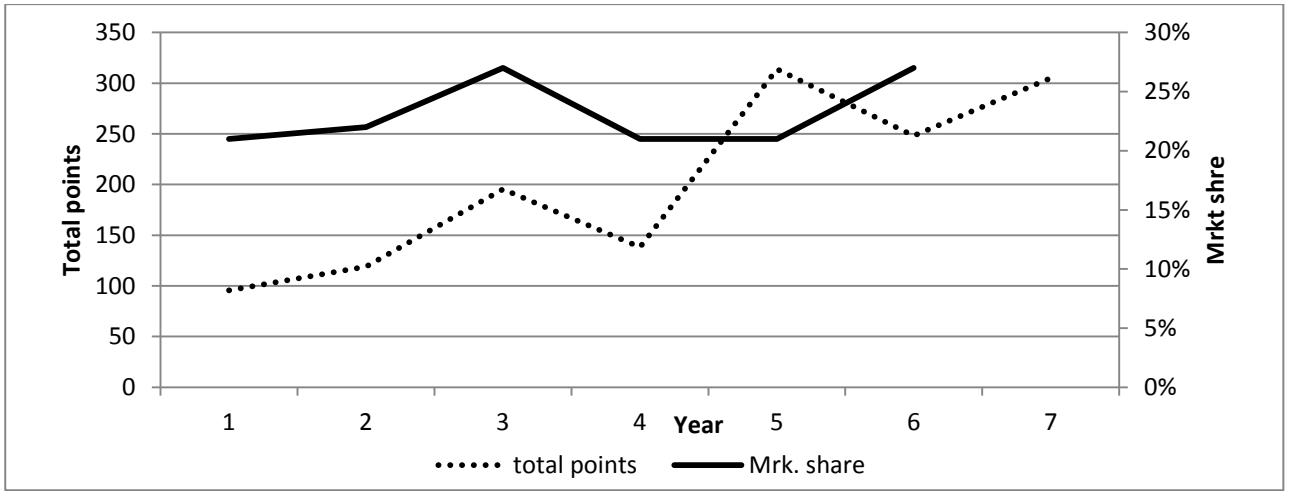

Figure (4.6): Iron Company trends of total EFQM scores and market share.
Source: Drawn from Table (4.9).

4.3.3. Giad Elsewedy Cables Company:

Appendix (4) Table (B) shows Giad Elsewedy Cables Company EFQM criteria scores (2009 – 2015). Table (4.11) shows Giad Elsewedy Cables Company total EFQM scores, production, sales and net profits (2009 -2015). Table (12) shows deflated sales and deflated net profits. Table (4.13) summarizes Tables (4.14), (4.15) and (4.16) which show the correlation results. Figures (4.7), (4.8) and (4.9) accompanied show the scatter plots of the correlations.

Pearson correlation between total EFQM scores and Giad Elsewedy Cables Company production is about (-0.852) and significant at (0.05), the correlation between scores and deflated sales is about (-0.600) and between the scores and the net deflated profits is about (-0.112).

It is clear that, there are no correlations between the EFQM scores and the studied parameters; deflated sales and net deflated profits; the accompanied scatter plots clarifies the picture as the points are wide dispersed, but there is a negative correlation between the scores and the production of the Company.

Table (4.17) shows that; in 2009, the base year, EFQM total scores was 230, production 6331 Ton and deflated sales was about 101.04 million SDG and net deflated profits was about 0.071 million SDG. In 2010, 2011, 2012, 2013 and 2015, total scores increased by about (-3%), 58%, (-4%), (-7%), (-10%) respectively. Production increased by about (-8%), (-28%), (-3%), 14%, and (-14%) respectively for the mentioned years, deflated sales increased by about (-6%), (-6%), (-22%), 10% and (-25%) respectively, the deflated profits increased by about 4%, (-15%), 12%, 27% and 30% respectively, (no records for the year 2014).

Table (4.18) shows that, during the lag period 2009 and 2015, we can remark those 52 points (23%) of EFQM scores increases was accompanied by about (-44%) decrease of deflated sales and about 26% increase of net deflated profits (100% total scores increase accompanied by about 113% increase of net deflated profits).

Table (4.11): Giad Elsewedy Cables Company total EFQM scores, production, sales and net profits:

Year	Total points	Production (ton)	Sales (million SDG)	Net profit (million SDG)
2009	230	6331	101.04	8.97
2010	222	5807	107.07	10.56
2011	350	4173	118.58	10.60
2012	335	4063	125.08	16.11
2013	313	4612	188.06	27.91
2015	282	3983	224.84	31.12

Source: Company feedback reports, 2011, 2013 and 2015.

Table (4.12): Giad Elsewedy Cables Company CPI, deflated sales and deflated net profits:

Year	Sales (million SDG)	Net profit (million SDG)	CPI	Deflated sales	Deflated Net profits
2009	101.04	8.97	127.15	0.795	0.07
2010	107.07	10.56	143.65	0.745	0.07
2011	118.58	10.60	169.62	0.699	0.06
2012	125.08	16.11	229.98	0.544	0.07
2013	188.06	27.91	313.97	0.599	0.09
2015	224.84	31.12	502.53	0.447	0.06

Source: Calculated from Table (4.11) and Appendix (5).

Table (4.13): Summery of Giad Elsewedy Cables Company Pearson correlations:

Company		EFQM scores	Production	Deflated Sales	Net deflated profits
Giad Elsewedy Cables Company	EFQM scores	1	-0.852	-0.600	-0.112

Source: Summarized from Tables (4.12) – (4.13) and (4. 14).

Table (4.14) Giad Elsewedy Cables EFQM and production Pearson correlations.

		EFQM scores	production
EFQM scores	Pearson Correlation	1	-.852*
	Sig. (2-tailed)		.031
	N	7	6
production	Pearson Correlation	-.852*	1
	Sig. (2-tailed)	.031	
	N	6	6

* Correlation is significant at the 0.05 level (2-tailed).

Source: Analyzed from secondary data by the author.

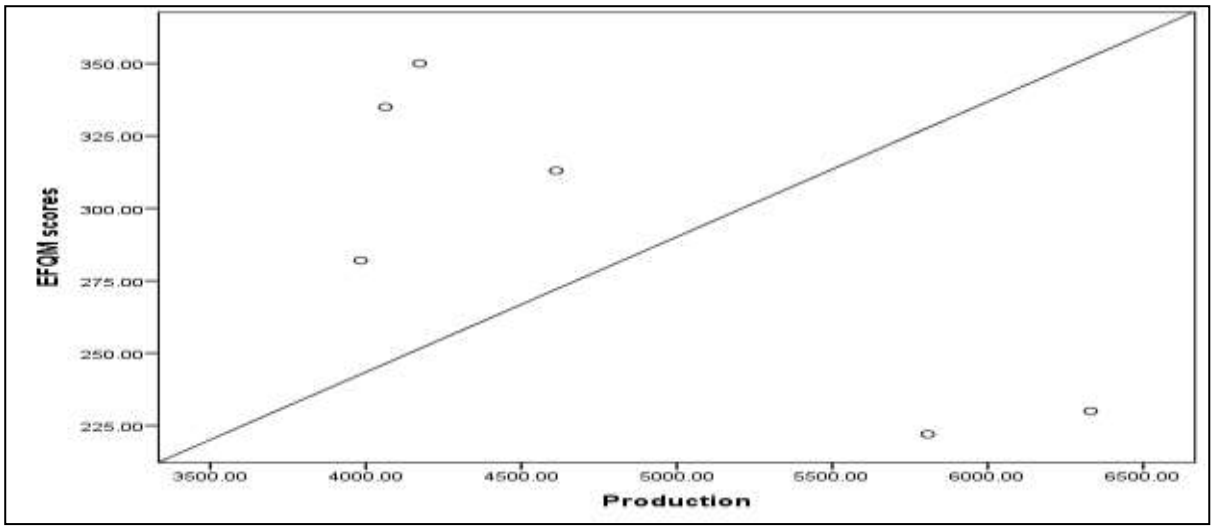

Figure (4.7): Scatter plot of EFQM scores and production of Giad Elsewedy Cables Company.

Source: Drawn from Table (4.14).

Table (4.15): Giad Elsewedy Cables Company EFQM scores and deflated sales Pearson correlations.

		EFQM scores	Deflated sales
EFQM scores	Pearson Correlation	1	-.600
	Sig. (2-tailed)		.208
	N	7	6
Deflated sales	Pearson Correlation	-.600	1
	Sig. (2-tailed)	.208	
	N	6	6

Source: Analyzed from secondary data by the author

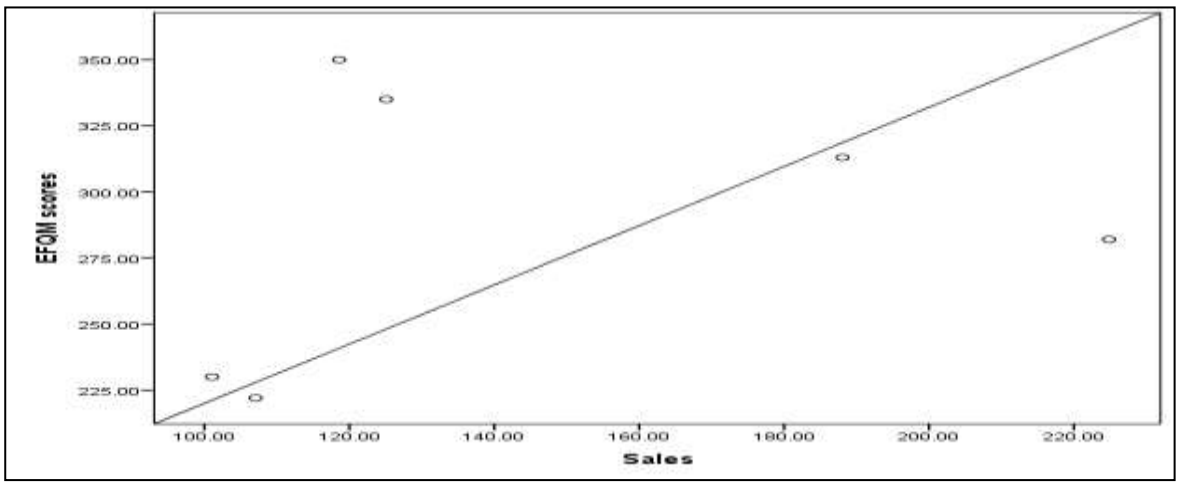

Figure (4.8): Scatter plot of EFQM scores and deflated sales of Giad Elsewedy Cables Company.

Source: Drawn from Table (4.15).

Table (4.16): Giad Elsewedy Cables Company EFQM scores and Net deflated profits Pearson correlations.

		EFQM scores	Net deflated profits
EFQM scores	Pearson Correlation	1	-0.112
	Sig. (2-tailed)		.832
	N	7	6
Net deflated profits	Pearson Correlation	-0.112	1
	Sig. (2-tailed)	.832	
	N	6	6

Source: Analyzed from secondary data by the author.

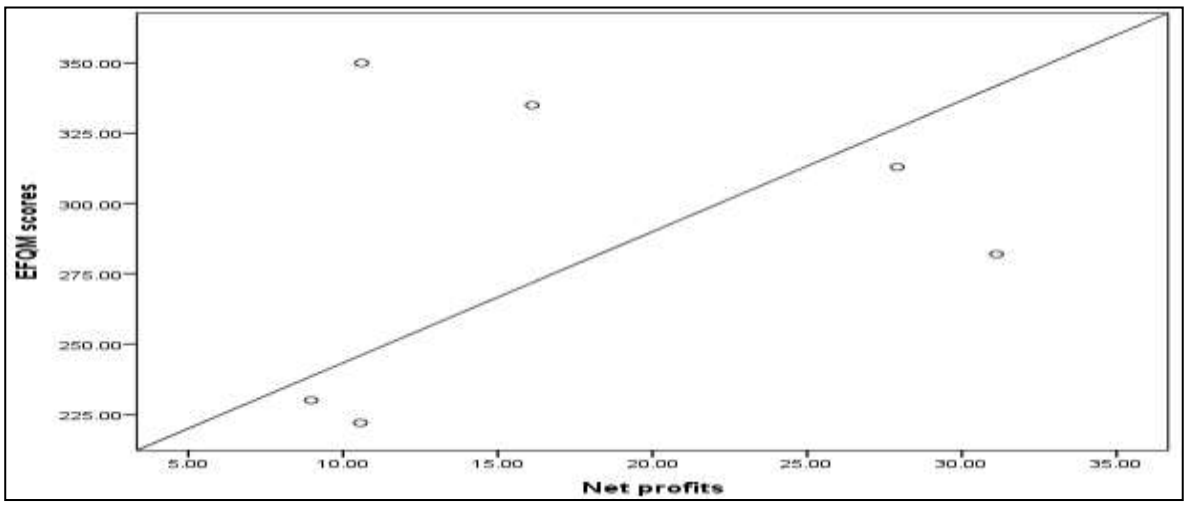

Figure (4.9): Scatter plot of EFQM scores and net deflated profits of Giad Elsewedy Cables Company.
Source: Drawn from Table (4.16).

Table (4.17): Giad Elsewedy Cables Company increase or decrease of total EFQM scores, production, deflated sales and deflated profits:

Year	Total scores			Production (ton)			CPI	Sales (million SDG)				Profits (million SDG)			
	values	(±)	(±) %	values	(±)	(±) %		values	deflated	(±)	(±) %	values	deflated	(±)	(±) %
2009	230			6331			127.15	101.04	0.795			8.97	0.071		
2010	222	-8	-3	5807	-524	-8	143.65	107.07	0.745	-0.049	-6	10.56	0.074	0.003	4.2
2011	350	128	58	4173	-1634	-28	169.62	118.58	0.699	-0.046	-6	10.6	0.062	-0.011	-15.0
2012	335	-15	-4	4063	-110	-3	229.98	125.08	0.544	-0.155	-22	16.11	0.070	0.008	12.1
2013	313	-22	-7	4612	549	14	313.97	188.06	0.599	0.055	10	27.91	0.089	0.019	26.9
2015	282	-31	-10	3983	-629	-14	502.53	224.84	0.447	-0.152	-25	31.12	0.062	-0.027	-30.3
2017	401	119	42		-3983										

Source: Calculated from Table (4.10).

Table (4.18): Giad Elsewedy Cables Company percentage increase or decrease of EFQM scores and the accompanied parameters from the beginning to the maturity:

Year	**Total scores**			**Production (ton)**			**Deflated Sales (million SDG)**			**Deflated profits (million SDG)**		
	values	**(±)**	**(±) %**	**values**	**(±)**	**(±) %**	**values**	**(±)**	**(±) %**	**values**	**(±)**	**(±) %**
2009	230			6331			0.795			0.071		
2015	282	52	23%	3983	-2348	-37%	0.447	-0.348	-44%	0.089	0.018	26%

Source: Calculated from Table (4.11).

4.3.4. Giad Elsewedy Cables Company graphical comparisons:

The followings are Giad Elsewedy Cables Company Graphical comparisons, between the scores and the production, deflated sales and the deflated profits.

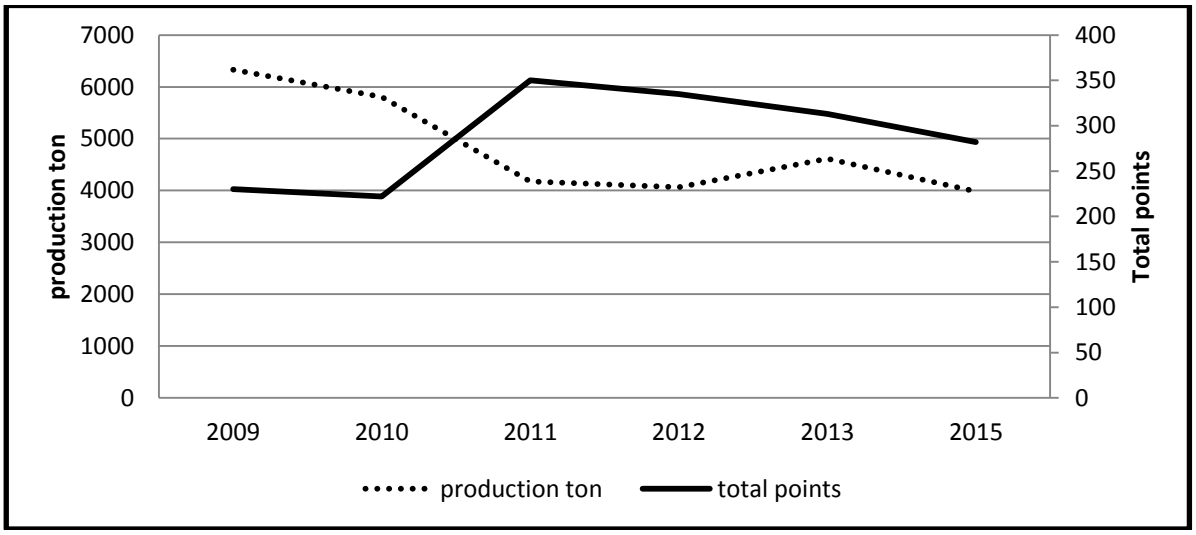

Figure (4.10): Giad Elsewedy Cables Company EFQM scores and production trends.
Source: Drawn from Table (4.17).

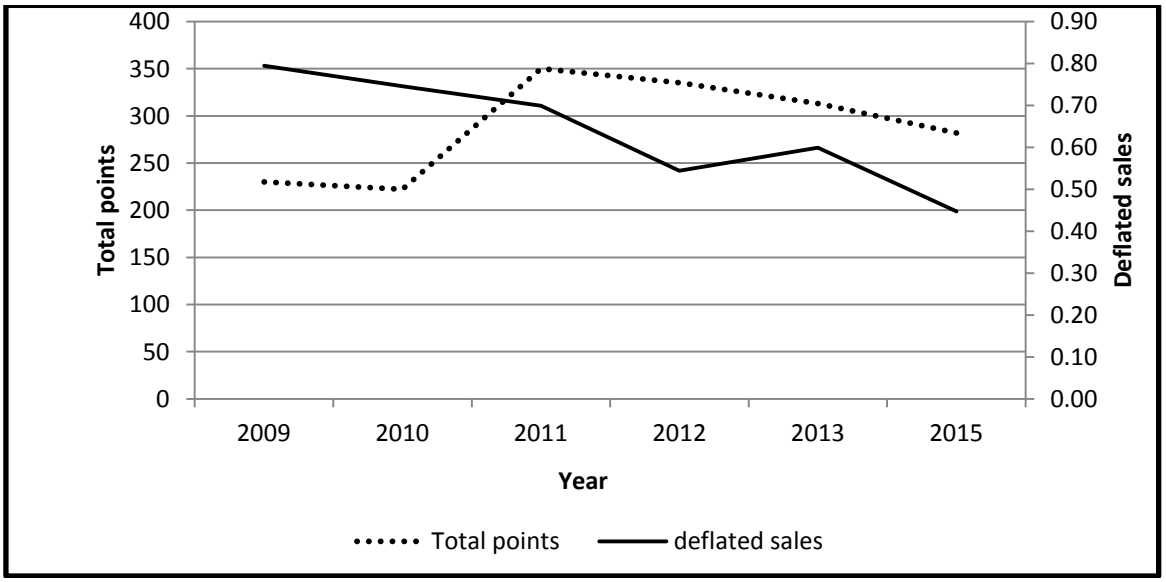

Figure (4.11): Giad Elsewedy Cables Company EFQM scores and deflated sales (Million SDG) trends.
Source: Drawn from Table (4.17).

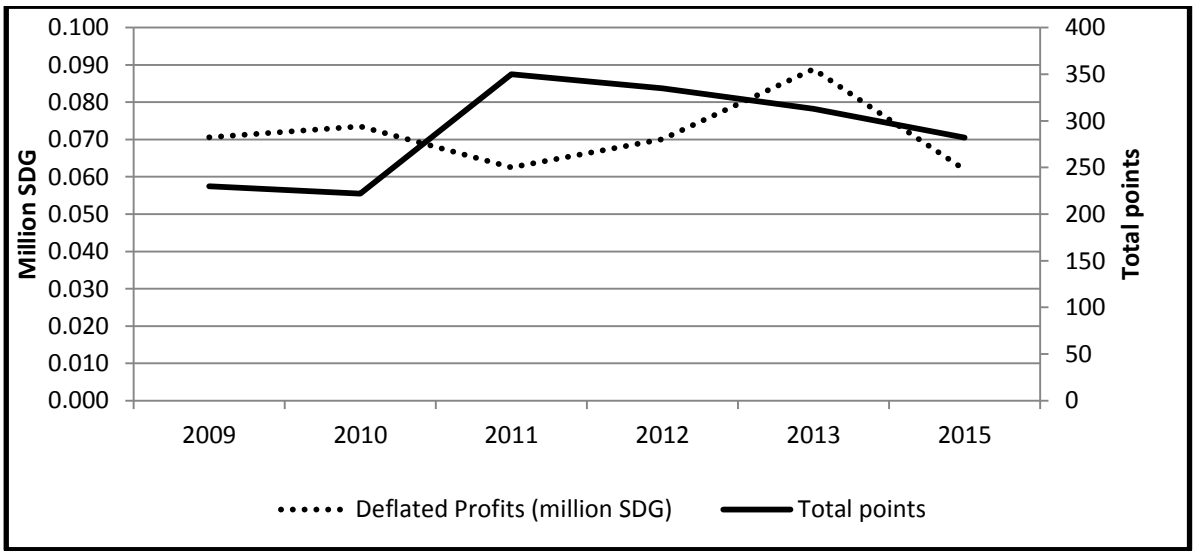

Figure (4.12): Giad Elsewedy Cables Company EFQM scores and net deflated profits (Million SDG) trends.
Source: Drawn from Table (4.17).

4.4. Discussion:

The analysis of the questionnaire concerning the respondents of the selected companies as a representative of Giad Group shows a low labour turn off among the companies, as more than 50% of their labour spent more than 9 years in their positions in the company, thus, they are well familiar with their positions and expertise enough to give close reliable opinions and questionnaire answers.

The analysis of the questionnaire also shows that the respondents of the selected companies are agreed that EFQM model cause improvements in their companies, about 87% of the respondents have a positive perspective "agree" that the implementation of EFQM model affect positively their company, this means that there is a high awareness and high commitment concerning EFQM implementation among the employees, the rest 13% of the employees need more administrative action to complete the perspective to 100%.

The percentages of agreements to the questionnaire answers are around 90^{th} or 60^{th}. The agreement peek and exceeded 90% for questions embodied a theoretical sense or meaning, while those questions embodied facts and more specific performance effectiveness the agreements scores are lower and around $80^{th} – 60^{th}$.

Theoretically, the implementation of EFQM model and the increase of total scores should accompany with financially and non-financially improvements, otherwise the stakeholders may not be so keen to adopt or continuing implementing such models or approaches, because EFQM model helps to ensure that business decision incorporate the needs of all stakeholders and are aligned with the organization's objectives.

The hypotheses of the study as mentioned in chapter (1) are; (a) There is a statistical significant positive correlation between the organization scores achieved in assessment according to EFQM model and the financial outcomes (sales and net profits) of the selected organizations. (b) There is a statistical significant positive correlation between the organization EFQM scores and volume of products and/or services delivered. (c) There is a statistical significant positive relationship between the EFQM model implementation and the business stakeholders' perception.

Concerning the relationships between the scores and the financial performance and the products delivered; from the secondary data analyzed we remarked that, there was a negative correlation between total EFQM scores and Giad Elsewedy Cables Company production which is about (-0.852) and significant at (0.05) which contradict the model and need more study to clarify the reason behind. For the other parameters Pearson correlation showed no significant correlations between the total EFQM scores and the selected performance parameters. The reasons behind can be stated, especially, there is a lack of assessment and refine application in Giad group. This result is in line with Suárez *et.al* (2017) who stated that "The businesses that partially used the model did not significantly improve their results. Thus, it is necessary to develop all the facilitators to maximise the correlation of these criteria with the results (holistic approach) and thereby optimising the use of the EFQM model".

According to RADAR logic when an organization determines the results it is aiming to achieve as part of its strategy, it should plan and develop an integrated set of sound (Approaches) to deliver the required results both now and in the future, and (Deploy) the approaches in a systematic way to ensure implementation. Thereafter, the organization should (Assess and Refine) the deployed approaches based on monitoring

and analysis of the results achieved and on-going learning activities. Hence, any implemented approaches may show the required improvements in the future. Thus at this point the hypotheses (a) and (b) statistically are not true.

From the graphs drawn which represent the relationships between the scores and the mentioned parameters, we can remark that any increase in the total EFQM scores is accompanied with key results improvements accordingly in the future; i.e. any decrease is accompanied with a decrease in net deflated profits, although it is not synchronized and not side by side. The obtained results may clarify that there are other internal and external factors effectively affect the key results beside the implementation of the model. Suárez *et.al* (2017) stated that businesses that have obtained awards for quality, mainly related to the EFQM model, obtain better results than those that have no awards or recognition for excellence. In addition, only the pioneers improve their results significantly, and those improved results continue in the year following the award.

The selected companies along their years of assessment achieved fluctuated scores and always less than 400 points; thus they are categorized as "Committed to Excellence level (C2E)", which designed for organizations that are at the beginning of their journey to excellence using well-structured method of continuous improvement towards excellence, and sometimes they reached the level of "Recognized for Excellence (R4E) '3 stars' by achieving 300 points";. There still long journey for these companies to be "Recognized for Excellence (R4E)" '4 stars', and '5 stars' which achieving more than 400, and 500 points of scores respectively. The organization to be "Excellence European Award (EEA)" it should secure 600 points or above.

Theoretically we expect EFQM scores of the companies improve year by year and showing a positive trend due to replication and experience, especially studied companies participate for the Giad Group Award, but we remark fluctuated trends of the EFQM scores of the studied companies.

Tabular analyses show EFQM implementation efficiency of the studied companies (ceteris paribus) that; concerning Iron Company, during the lag time from the year 2009 the begging of EFQM implementation and the year 2016 (supposed to be

year of maturity), we can remark that about 219 points increase in EFQM scores was accompanied by about 1% increase of deflated sales and about 207% increase of deflated profits; (100% scores increase accompanied by about 0.45% and 95% increase of deflated sales and net deflated profits respectively). On the other hand concerning Giad Elsewedy Cables Company; during the lag period the year 2009 and the year 2015; about 52 points which about 23% increase of EFQM scores was accompanied by about -0.44% decrease of deflated sales and about 26% increase of net deflated profits; (100% total scores increase accompanied by 113% increase of net deflated profits), this clarify the better efficiency of Giad Elsewedy Cables Company concerning profits.

CHAPTER FIVE

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1. Conclusions:

1. Pearson correlation analysis showed no statistical significant correlation between the EFQM scores and net deflated profits and market share of the Iron Company.
2. Concerning Giad Elsewedy Cables Company, Pearson correlation analysis showed no statistical significant correlation between EFQM scores and sales and net deflated profits, and there is a negative correlation between EFQM scores and production which is inconsistent result.
3. The graphical layouts of total EFQM scores, sales, production, net deflated profits and market share clarify relation and harmonious trends between EFQM scores and the mentioned key results within the two companies, although the consistency is not side by side.
4. From the tabular analysis we can conclude that the average efficiency of Iron Company within the years 2009 - 2016 is that; 100% increase of EFQM scores is accompanied with about 165% increase of sales and about 95% increase of net deflated profits.
5. From the tabular analysis we can conclude that the average efficiency of Giad Elsewedy Company within the years 2009 - 2015 is that; 100% increase of EFQM scores is accompanied with 535% increase of sales, and 113% increase of net deflated profits.
6. The study showed the different key results obtained due to different effectiveness of approach implementation within the different companies.
7. The study showed the importance of assessment and refine for more efficient performance and key results.
8. The study showed that the financial results of EFQM model implementation may be clearer and acquired after a more lag of time.

9. Although most of the respondents questioned are "strongly agreed" or "agreed" that EFQM model has positive inferences on companies. The agreement scores acquire higher percentages when the questions involved theoretical missions rather than those concerning practical facts.
10. The high percentage of positive respondent's perception means; there is a high awareness, high commitment and less resistance among the employees; which will lead to continuing of the excellence model implementation and quality improvements.

5.2. Limitations of the Study:

1. The researcher found no similar studies in Sudan to compare the presented results.
2. Lack of horizontally consistent records (same categorized data for all companies to compare), and difficulties to obtain the data and records, which the Companies' Administrations recognized as secret information.
3. Due to administrations hesitations only three out of four selected companies the researcher collect primary data (questionnaires), and only two out of four selected companies the researcher collect the secondary data (financial records).
4. The few number of the studied companies (two companies), and the short secondary data series (6 - 7 years) may be a reason for the inconsistent results.

5.3. Recommendations:

1. Giad Group should continue implementing EFQM model through the actions and practices of Giad Excellence Awards, to improve companies' performance.
2. More concern and attention should be devoted to horizontally categorized records, year by year, to provide a good source for future study.
3. The researcher recommends more EFQM model and excellence culture deployment among the human resources to improve their awareness and commitment to excellence; excellence is concern for all.
4. More concern should be devoted towards cause and result issues.
5. Implementation of assessment and refine processes, for more efficient performance and key results.

6. The General Administration of Giad Group, should perform a study involve all companies in the Group to explore the effect of EFQM model implementation in financial and non-financial aspects of the companies, because culture of nations varied and deeply affect results of imported models, and sometimes it is very important to manipulate models to suit and fit our culture and environment.

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APPENDICES

1. Questionnaires:

A. Arabic Questionnaire:

بسم الله الرحمن الرحيم

جامعة الســـودان للعـــــلوم و التكنولوجيا

كلية الدراســـــات العليا

مركز إدارة الجـــودة الشـــــاملة و التميز

التـاريخ/.....

الســـيد/.....

السلام عليكم ورحمة الله وبركاته

الموضـــوع: إســـــــتبيان بحـــث

1. يسعدني أن أقوم بإجراء دراسة ميدانية بعنوان:

أثر تطبيق النمـــوذج الأوروبي للتمـــيز على أداء الأعـــمال (دراســـة حـــالة: مجموعـــة جـــياد الصناعـــية).

The Impact of Applying EFQM Excellence Model on Business Performance

(Case Study: GIAD Industrial Group)

و ذلك ضمن متطلبات بحث تكميلى لنيل درجة الماجستير فى إدارة الجودة الشاملة والتميز، ويتطلب ذلك جمع و تحليل مجموعة من البيانات لتكملة البحث، و أرجو الإستفادة من خبراتكم العملية و العلمية القيمة و أن تكون مشاركتكم مساهمة منكم لتكملة هذه الدراسة.

2. الغرض من الدراســة:

دراسة أثر إرتفاع درجات تقييم النموذج الأوروبي للتميز على نتائج الأعمال المالية و الغير مالية، و خاصة معدلات الربحية و زيادة الإنتاج و أثر ارتفاع الدرجات على فهم و إدراك العملاء للمنظمة.

3. ســـــرية المعلومـات:

كل المعلومات الواردة في هذا الإستبيان ستستخدم لأغراض الدراسة الأكاديمية و أتعهد بأن لا تستخدم لأى أغراض أخرى غير الدراسة.

4. نتائج الدراســـــــة:

سيتم تسليم الجهات التي تمت دراستها فى هذا البحث نسخة من البحث عند الطلب.

5. شـــاكراً لكم حســـن تعاونكم فى الإجـــابة على أســـئلة الإســـتبيان المـــرفق و الله الموفق.

الباحث

الإســــــــــــتبيان

إسم الشركة أو المؤسسة:.....

الرجاء الإجابة على الأسئلة الواردة بوضع علامة (√) فى المربع المناسب أو كتابة الإجابة فى المكان المخصص.

1. وظيفة المســتجيب:

مدير الشركة ☐

مدير مالي ☐

مدير الجودة ☐

مدير تسويق ☐

مدير مبيعات ☐

مدير فني ☐

أخري (الرجاء حدد) .....

2. عدد سنوات ممارستك العمل بالشــركة أو الوظيفة:

أقل من 4 سنوات ☐

4 - 8 سنة ☐

9 - 13سنة ☐

أكثر من 13 سنة ☐

3. معلومات الشركة:

1.3. مجال عمل الشركة:

إنشاءات ☐

صناعات مدنية ☐

تقديم خدمات ☐

أخرى (الرجاء حدد) .....

2.3. عدد ســنوات عمل الشــركة:

أقل من 5 سنوات ☐

5 - 10 سنة ☐

11- 15 سنة ☐

16 - 20 سنة ☐

أكثر من 20 سنة ☐

4. عدد سنوات تطبيق النموذج الأوروبى للتميز فى الشركة:

أقل من 4 سنوات ☐

4 - 8 سنة ☐

أكثر من 8 سنة ☐

5. أسئلة تتعلق بأداء الشركة التي تعمل بها خلال فترة تطبيق النموذج الأوروبي للتميز:

من خلال تجربتك رجاءاً ضع علامة (√) فى المربع الذي يعبر عن رأيك.

الرقم	السـؤال	أوافق بشدة	أوافق	محايد	لا أوافق	لا أوافق بشدة
1.5	إستخدام النموذج الأوروبى للتميز أفاد الشركة فى نشر ثقافة الجودة و الإمتياز					
2.5	إستخدام النموذج الأوروبى للتميز حسّن من نتائج مؤشرات الأداء بين المخطط و المنفذ فى الشركة					
3.5	إستخدام النموذج الأوروبى للتميز زاد من كفاءة الشركة					
4.5	إستخدام النموذج الأوروبى للتميز أفاد الشركة فى فتح أسواق جديدة					
5.5	إستخدام النموذج الأوروبى للتميز أدى الى زيادة إنتاج الشركة					
6.5	إستخدام النموذج الأوروبى للتميز أدى إلي زيادة حصة السوق من منتجات الشركة					
7.5	إستخدام النموذج الأوروبى للتميز أدى الي تحسُّن جودة المنتج فى الشركة					
8.5	إستخدام النموذج الأوروبى للتميز حسَّن من سمعة الشركة لدى العاملين بها					
9.5	إستخدام النموذج الأوروبى للتميز حسَّن من سمعة الشركة لدى العملاء الخارجيين					
10.5	إستخدام النموذج الأوروبى للتميز أدى الي تقليل الهدر بالشركة					
11.5	إستخدام النموذج الأوروبى للتميز أدى الي تقليل التكلفة الكلية للشركة					
12.5	إستخدام النموذج الأوروبى للتميز زاد من فرص الشركة فى التعاقدات و إكتساب أعمال جديدة					
13.5	إستخدام النموذج الأوروبى للتميز فى الشركة يعنى إستجابة الشركة لمتطلبات و توقعات العملاء					
14.5	درجات التقييم السنوية المتحصلة بإستخدام النموذج الأوروبى متماشية مع أهداف نتائج أعمال الشركة					
15.5	إستخدام النموذج الأوروبى للتميز قادنا الي التحسين المستمر فى الشركة					
16.5	إستخدام النموذج الأوروبى للتميز فى الشركة زاد من التزامي بتطبيق نظم الجودة الشاملة و التميز					

لك خالص الشكر و التقدير

B. English Questionnaire:

Sudan University of Science and Technology

Collage of Graduate Studies

Total Quality Management and Excellence Centre

Date / .....

Mr.

Subject: Research Questionnaire

1. I am pleased to undertake a field study entitled:

The Impact of Applying EFQM Excellence Model on Business Performance.

(Case Study: GIAD Industrial Group)

it is a part of the requirements of a complementary research to achieve the Master's degree in Quality and Excellence Management. This requires collecting and analyzing a set of data to complete the research. I hope that I will benefit from your valuable practical and scientific expertise and that your participation will contribute to the completion of this study.

2. Purpose of the study:

Study of the impact of the high degree of evaluation of the European model of excellence on the results of financial and non-financial business, especially profitability rates and increase production and the impact of high grades on the understanding and perception of customers of the organization.

3. Confidentiality of Information:

All information contained in this questionnaire will be used for academic purposes and I undertake not to use it for any purposes other than study.

4. Results of the study:

The entities studied in this research will be provided with a copy of the research upon request.

5. Thank you for your kind cooperation in answering the questions of the attached questionnaire.

The Researcher

The Questionnaire

The Company's name:.....

Please answer the questions by ticking (√) in the appropriate box or writing the answer in the space provided.

1. Position of the respondent:

- Company Director ☐
- Financial Manager ☐
- Quality manager ☐
- Marketing manager ☐
- Sales Manager ☐
- Technical Manager ☐
- Other (please specify) .....

2. Number of years of respondents spent in the company or job:

- Less than 4 years ☐
- 4 - 8 years ☐
- 9 - 13 years ☐
- More than 13 years ☐

3. Company Information:

1.3. Field of the Company:

- Construction ☐
- Civil industries ☐
- Services provided ☐
- Other (please specify) .....

2.3. Number of years of work:

- Less than 5 years ☐
- 5 - 10 years ☐
- 11-15 years ☐
- 16-20 years ☐
- More than 20 years ☐

4. Number of years of application of the European model of excellence in the company:

Less than 4 years ☐

4 - 8 years ☐

More than 8 years ☐

5. Questions related to the performance of the company in which you work during the period of application of the European model of excellence:

In your experience please place a (√) in the box that reflects your opinion.

Q. No	The Field	Strongly Agree	Agree	Indifferent	Disagree	Strongly disagree
5.1	The use of EFQM benefited the company in deployment of Quality culture.					
5.2	The use of EFQM improved the performance indicators between the planed and the implemented processes					
5.3	The use of EFQM improved the efficiency of the company					
5.4	The use of EFQM benefited the company in opening new markets					
5.5	The use of EFQM increased production of the company					
5.6	The use of EFQM increased market share.					
5.7	The use of EFQM improved product quality					
5.8	The use of EFQM improved company reputation among its labour					
5.9	The use of EFQM improved company reputation among external customers.					
5.10	The use of EFQM decreased wastes in the company					
5.11	The use of EFQM decreased company total costs					
5.12	The use of EFQM increased the chance to new contracts and business					
5.13	The use of EFQM means the company responded to customers' requirements and expectation					
5.14	The EFQM scores of our company were in line with company goals					
5.15	The use of EFQM led us to continuous improvements of the company					
5.16	The use of EFQM increased my commitment to quality					

Thanks

2. Frequencies Respondents' Experience:

A. Iron Company:

Years of experience	Frequency	Percent	Cumulative Percent
less than 4 years	1	4.0	4.0
4 - 8 years	9	36.0	40.0
9 - 13 years	8	32.0	72.0
more than 13 years	7	28.0	100.0
Total	25	100.0	

Source: Analyzed from questionnaire by the author

B. Truck Company:

Years of experience	Frequency	Percent	Cumulative Percent
less than 4 years	6	30.0	30.0
4 - 8 years	1	5.0	35.0
9 -13 years	2	10.0	45.0
more than 13 years	11	55.0	100.0
Total	20	100.0	

Source: Analyzed from questionnaire by the author.

C. Giad Elsewedy Cables Company:

Years of experience	Frequency	Percent	Cumulative Percent
4 - 8 years	2	9.1	9.1
9 - 13 years	4	18.2	27.3
more than 13 years	16	72.7	100.0
Total	22	100.0	

Source: Analyzed from questionnaire by the author.

3. Frequencies of Respondents Answers to Questions (5.1) - (5.16):

A. Question (5.1); the use of EFQM benefited the company in deployment of Quality culture:

Item	Frequency	Percent	Cumulative Percent
Disagree	1	1.5	1.5
Indifferent	2	2.9	4.4
Agree	26	38.2	42.6
strongly agree	39	57.4	100.0
Total	68	100.0	

B. Question (5.2); the use of EFQM improved the performance indicators between the planed and the implemented processes:

Item	Frequency	Percent	Cumulative Percent
Disagree	1	1.5	1.5
Indifferent	4	5.9	7.4
Agree	32	47.1	54.4
strongly agree	31	45.6	100.0
Total	68	100.0	

C. Question (5.3); the use of EFQM improved the efficiency of the company:

Item	Frequency	Percent	Cumulative Percent
indifferent	3	4.4	4.4
agree	30	44.1	48.5
strongly agree	35	51.5	100.0
Total	68	100.0	

D. Question (5.4); the use of EFQM benefited the company in opening new markets:

Item	Frequency	Percent	Cumulative Percent
disagree	5	7.4	7.4
indifferent	12	17.6	25.0
agree	28	41.2	66.2
strongly agree	23	33.8	100.0
Total	68	100.0	

E. Question (5.5); the use of EFQM increased production of the company:

Item	Frequency	Percent	Cumulative Percent
disagree	3	4.4	4.4
indifferent	11	16.2	20.6
agree	27	39.7	60.3
strongly agree	27	39.7	100.0
Total	68	100.0	

F. Question (5.6); the use of EFQM increased market share:

Item	Frequency	Percent	Cumulative Percent
disagree	5	7.4	7.4
indifferent	9	13.2	20.6
agree	33	48.5	69.1
strongly agree	21	30.9	100.0
Total	68	100.0	

G. Question (5.7); the use of EFQM improved product quality:

Item	Frequency	Percent	Cumulative Percent
indifferent	2	2.9	2.9
agree	34	50.0	52.9
strongly agree	32	47.1	100.0
Total	68	100.0	

H. Question (5.8); the use of EFQM improved company reputation among its labour:

Item		Frequency	Percent	Cumulative Percent
	disagree	1	1.5	1.5
	indifferent	6	8.8	10.4
Valid	agree	28	41.2	52.2
	strongly agree	32	47.1	100.0
	Total	67	98.5	
Missing	System	1	1.5	
Total		68	100.0	

I. Question (5.9); the use of EFQM improved company reputation among external customers:

Item	Frequency	Percent	Cumulative Percent
disagree	2	2.9	2.9
indifferent	9	13.2	16.2
agree	26	38.2	54.4
strongly agree	31	45.6	100.0
Total	68	100.0	

J. Question (5.10); the use of EFQM decreased wastes in the company:

Item	Frequency	Percent	Cumulative Percent
disagree	1	1.5	1.5
indifferent	5	7.4	8.8
agree	32	47.1	55.9
strongly agree	30	44.1	100.0
Total	68	100.0	

K. Question (5.11); the use of EFQM decreased company total cost:

Item	Frequency	Percent	Cumulative Percent
disagree	2	2.9	2.9
indifferent	19	27.9	30.9
agree	27	39.7	70.6
strongly agree	20	29.4	100.0
Total	68	100.0	

L. Question (5.12); the use of EFQM increased the chance to new contracts and business:

Item	Frequency	Percent	Cumulative Percent
disagree	3	4.4	4.4
indifferent	10	14.7	19.1
agree	29	42.6	61.8
strongly agree	26	38.2	100.0
Total	68	100.0	

M. Question (5.13); the use of EFQM means the company respond to customers' requirements and expectation:

Item	Frequency	Percent	Cumulative Percent
indifferent	4	5.9	5.9
agree	33	48.5	54.4
strongly agree	31	45.6	100.0
Total	68	100.0	

N. Question (5.14); The EFQM scores of were in line with company goals:

Item	Frequency	Percent	Cumulative Percent
disagree	1	1.5	1.5
indifferent	8	11.8	13.2
agree	37	54.4	67.6
strongly agree	22	32.4	100.0
Total	68	100.0	

O. Question (5.15); the use of EFQM led us to continuous improvements of the company:

Item	Frequency	Percent	Cumulative Percent
disagree	1	1.5	1.5
indifferent	3	4.4	5.9
agree	30	44.1	50.0
strongly agree	34	50.0	100.0
Total	68	100.0	

P. Question (5.16); the use of EFQM increased my commitment to quality:

Item	Frequency	Percent	Cumulative Percent
indifferent	3	4.4	4.4
agree	29	42.6	47.1
strongly agree	36	52.9	100.0
Total	68	100.0	

4. Companies EFQM Scores:

A. Iron Company EFQM scores (2009 - 2017):

Year / Criteria	2009	2010	2011	2012	2013	2015	2017
Leadership	18	13	23.2	14	41.33	21	37
Strategy	17	10	25	15	38.26	22	33
People	14.4	12	23.8	18	31.44	28	31
Partnership and resources	6.3	16	23	19	29.11	26	35
Processes	26.6	14	24	15	36.83	45	43
Customer results	10	18.8	22.5	15	40.39	39	35
People results	3.4	10	15	16.25	27.91	22	24
Society results	2.3	10	12.5	5	25.1	15	31
Business results	0	15	26.25	21	43.44	30	36
Total points	95.5	118.8	195.25	138.25	313.8	248	305

Source: Giad Group General Administration.

B. Giad Elsewedy Cables Company EFQM scores (2009 – 2015):

Year / Criteria	2009	2010	2011	2012	2013	2014	2015
Leadership	21	24	40	39	30	83.33	45
Strategy	19.2	22.5	43.75	35	39	42.64	39
People	21.6	28	38	39	32	37.44	39
Partnership and resources	26.1	32	36	39	31	41.22	36.5
Processes	51.8	39	38	39	45	53.11	51
Customer results	37.5	22.5	43.13	39	48	53.28	60.8
People results	16.88	11.25	37.5	40	24	36.09	35
Society results	14.24	12.5	25	12.25	19	35.73	35
Business results	22.5	30	48.75	53.63	45	44.38	60
Total points	230.63	222	350.13	335.88	313	282.22	401

Source: Giad Group General Administration.

5. Sudan overall, monthly CPI (2005 – 2017), Base 2007 = 100:

Month	January	February	March	April	May	June	July	August	September	October	November	December	Year average
2005	82.74	82.24	82.57	84.12	85.81	88.75	93.63	95.23	92.17	90.50	90.15	84.02	87.84
2006	87.92	88.68	87.95	88.67	89.93	92.86	96.18	97.52	99.81	97.45	98.25	99.50	94.16
2007	99.77	99.34	98.90	98.09	98.74	98.92	100.34	100.62	101.42	101.03	100.94	101.77	100.00
2008	106.03	106.56	106.63	109.64	110.67	115.81	119.44	122.52	120.87	118.61	117.83	116.94	114.30
2009	117.95	118.36	118.23	118.98	120.52	127.22	131.17	135.32	136.60	133.89	134.91	132.66	127.15
2010	135.20	135.31	135.74	136.91	138.89	147.04	148.26	149.32	149.20	146.83	148.10	153.03	143.65
2011	157.83	158.19	158.90	159.74	162.18	169.16	174.38	180.86	180.13	175.94	176.45	181.94	169.62
2012	188.29	191.87	194.52	205.45	211.54	232.02	247.01	256.98	255.08	255.58	258.59	262.79	229.98
2013	270.44	281.75	287.64	290.59	290.36	294.81	305.85	315.73	330.19	358.51	368.83	372.91	313.97
2014	381.11	386.04	390.20	400.23	409.98	428.32	448.85	462.24	459.51	459.75	463.23	468.63	429.84
2015	472.52	474.70	480.66	485.09	491.01	506.53	512.11	514.53	521.82	521.23	522.54	527.59	502.53
2016	531.30	536.14	536.90	547.41	559.66	579.01	596.59	607.92	617.40	623.39	676.62	688.37	591.73

Source: Central Bureau of Statistics (2018).