



Al al-Bayt University

Faculty of Economics and Administrative Sciences

Department of Business Administration

The Impact of Soft Total Quality Management Practices on Product Innovation in the Industrial Companies Operating in King Abdullah II Industrial Estate

(أثر ممارسات ادارة الجودة الشاملة الناعمة على إبداع المنتجات في الشركات الصناعية العاملة في مدينة الملك عبدالله الثاني الصناعية- سحاب)

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جامعة آل البيت

عمادة الدراسات العليا

التفويض

أنا آلاء ارشيد سلامه الخوالدة أفوض جامعة آل البيت بتزويد نسخ من رسالتي، للمكتبات أو المؤسسات أو الهيئات أو الأشخاص عند طلبهم حسب التعليمات النافذة في الجامعة.

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أعلن بأنني قد التزمت بقوانين جامعة آل البيت، وأنظمتها وتعليماتها وقراراتها السارية المفعول المتعلقة بإعداد رسائل الماجستير والدكتوراه عندما قمت شخصياً بإعداد رسالتي بعنوان:

The Impact of Soft Total Quality Management Practices on Product Innovation in the Industrial Companies Operating in King Abdullah II Industrial Estate

"اثر ممارسات ادارة الجودة الشاملة الناعمة على إبداع المنتجات في الشركات الصناعية العاملة في مدينة الملك عبدالله الثاني الصناعية- سحاب"

وذلك بما ينسجم مع الأمانة العلمية المتعارف عليها في كتابة الرسائل والأطاريح العلمية. كما أعلن بأن رسالتي غير منقولة أو مستلة من رسائل أو أطاريح أو كتب أو أبحاث أو أي منشورات علمية تم نشرها أو تخزينها في أي وسيلة إعلامية، وتأسيساً على ما تقدم فإنني أتحمّل المسؤولية بأنواعها كافة فيما لو تبين غير ذلك بما فيه حق مجلس العمداء في جامعة آل البيت بإلغاء قرار منحي الدرجة العلمية التي حصلت عليها وسحب شهادة التخرج مني بعد صدورها دون أن يكون لي أي حق في التظلم أو الاعتراض أو الطعن بأي صورة كانت في القرار الصادر عن مجلس العمداء بهذا الصدد.

توقيع الطالبة.....

التاريخ / / ٢٠١٨م

Committee Decision

This Thesis (The Impact of Soft Total Quality Management Practices on Product Innovation in the Industrial Companies Operating in King Abdullah II Industrial Estate) was Successfully Defended and Approved on 2/8/2018

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Dedication

I dedicate this work and effort to my dear parents, brothers and sister, whom gave me full support and motivation during my study.

To my husband Hamza on his patience and his supporting for me during study period.

To my kids Sarah and Hazem whom I was always busy from

To all those who generously helped and supported me during my study my Academic staff and Friends.

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List of Abbreviations

Meaning	Abbreviation
Total Quality Management	TQM
Human Resource Management	HRM
International Organization for Standardization	ISO
Abdullah II Bin Al-Hussein Industrial	AIE
Statistical Package for Social Sciences	SPSS
Standard Deviation	S.D
Variance Inflation Factor	VIF
Analysis Of Variance	ANOVA

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ABSTRACT

This study aims to identify the extent of adoption of Soft Total Quality Management (TQM) Practices in Jordanian industrial companies operating in King Abdullah II Bin Al-Hussein Industrial Estate (AIE) and its impact on product innovation. Six practices were selected in the study: leadership, employee training, employee empowerment, teamwork, customer focus and continuous improvement. The questionnaire was used as a tool for collecting data, a proportional sampling consisted from twenty companies was chosen to represent the study sample, 200 questionnaires were distributed to managers in all departments, engineers and supervisors who have experience in the field.

Follow that , data were analyzed by a set of statistical methods, (Means, Standard Deviations, Cronbach Alpha, ANOVA, VIF, Tolerance, Kolmogorov – Smirnov Test and Multiple Regressions).

Among its main conclusions; the study shows that three practices statistically have significant impact on product Innovation: continuous improvement, leadership and employee empowerment. While the other practices: employee training, teamwork and customer focus have no statistically significant impact on product Innovation.

Based on the findings the study recommends that industrial managers should promote better adoption of Soft TQM practices through participation, supervision and providing financial support to improve the level of innovation in their companies; the management of industrial companies should provide an appropriate environment that encourages employees to offer new innovative ideas.

Keywords: Total Quality Management (TQM) Soft Total Quality Management, product innovation.

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الملخص باللغة العربية

هدفت هذه الدراسة إلى التعرف على مدى تبني ممارسات إدارة الجودة الشاملة في الشركات الصناعية العاملة في مدينة الملك عبدالله الثاني الصناعية وأثرها على إبداع المنتجات. تم اختيار ست ممارسات من ممارسات إدارة الجودة الشاملة في هذه الدراسة وهي: القيادة، تدريب العاملين، تمكين الموظفين، العمل الجماعي، التركيز على الزبائن، التحسين المستمر. تم استخدام الاستبيان كأداة رئيسية لجمع المعلومات واختيار عينة تناسبية طبقية مكونة من عشرين شركة لتمثل عينة الدراسة. وتم توزيع ٢٠٠ استبيان على موظفي الإدارة العليا والوسطى بالإضافة إلى المشرفين ذوي الاختصاص في مجال الدراسة. ومن ثم تحليلها بالأساليب الإحصائية وهي (الوسط الحسابي، الانحراف المعياري، كرونباخ ألفا، تحليل التباين الأحادي، معامل التباين التضخم، اختبار كولمو دروف سيميرنوف، الانحدار الخطي المتعدد).

أظهرت نتائج الدراسة أن ثلاث ممارسات لإدارة الجودة الشاملة لها أثر ذو دلالة إحصائية على إبداع المنتجات وهي (التحسين المستمر، القيادة، تمكين الموظفين). أما الممارسات (تدريب العاملين، العمل الجماعي، التركيز على الزبائن) فلا يوجد لها أثر ذو دلالة إحصائية على إبداع المنتجات. وبناء على نتائج تطبيق ممارسات إدارة الدراسة تم تقديم التوصيات التالية: ينبغي على إدارة الشركات الصناعية تعزيز الجودة الشاملة فيها من خلال الإشراف عليها والمشاركة فيها ومن خلال تقديم الدعم المالي لرفع مستوى يتوجب على مديري الشركات توفير البيئة الملائمة التي تشجع الموظفين على تقديم أفكار الجودة والإبداع. إبداعية.

الكلمات المفتاحية: إدارة الجودة الشاملة، ممارسات إدارة الجودة الشاملة، إبداع المنتج.

Chapter One: General Frame Work of the Study

Preview :

Nowadays industrial companies face challenges in all economic, political and technological aspects which forced these companies to search for more solutions to survive in the markets and adapt quickly to the rapid changes. In order to overcome these challenges, companies have to develop their management systems and techniques. One of the most important of these systems that most of companies started to adapt is Total Quality Management (TQM) and its applications (practices), which considered a strategic key for achieving continuous success, competitive advantage and improved performance (Bon & Mustafa, 2013).

In order to differentiate and proceed, companies have become focused and compete for quality and innovation in their outputs in the form of goods or services (Alshaar, 2014). Numerous companies which have benefited from innovation increased their profits and market share. The important point of that, a firm cannot be successful with innovation if cannot produce products that meet acceptable quality standards (Costa & Lorente, 2008).

TQM focuses on the customer satisfaction, management leadership and continuous improvement which are critical to the success of innovation through encouraging change and creative thinking in organizing works (Costa and Lorente, 2008). Being Customer-oriented encourages companies to search consistently for new customer needs and expectations, in order to survive in this globally competitive environment (Prajogo & Brown, 1994). TQM practices can be classified into two groups: the management system – leadership, planning, Human Resources Management (HRM), etc. – and the technical system (Evans and Lindsay, 1999), or into the soft and hard parts (Wilkinson et al., 1998).

The technical system, as defined by Evans and Lindsay (1999), consists of a set of tools and techniques (run charts, control charts, Pareto diagrams, brainstorming, stratification, tree diagrams, histograms, scatter diagrams, force-field analysis, flow charts, etc.), while the hard part, according to (Wilkinson et al., 1998), includes production and work process control techniques which ensure the correct functioning of such processes, including, amongst other things, process design, just-in-time philosophy, the International Organization for Standardization (ISO) 9000 and the seven basic quality control tools. The management system or the soft part is the behavioral aspects of management or the human aspects, such as leadership and people management.

The political and economic circumstances that surrounds Jordan have placed a great pressures on the industrial sector, and the most important factors affecting it is the export process to the neighboring countries that become difficult because of the political situation in those countries, which in return affected the production of the industrial companies in Jordan and its profit.

Accordingly, the Industrial companies in Jordan are trying to improve the quality of their products and services, and to create a new products within the international specifications in order to enter the regional and global markets.

There are a few researches of Soft TQM practices and their impact on product innovation in the industrial sector in Jordan, since most of the studies were conducted on the educational and services sector. Therefore, this study provides an important information about the effect of Soft TQM practices on product innovation in Industrial Companies operating in Abdullah Bin Al Hussein Industrial Estate (AIE).(see Appendix E).

Statement of the Problem :

With increasing competition in the local and global markets, innovation has emerged as a major source supporting the growth of companies. Total quality management applications and innovation have become essential elements for creating and enhancing competitive advantage, they play a vital role in the success of companies (Abrunhosa & Sa, 2008; Hurmelinna et al., 2008; Mushtaq et al., 2011).

By returning to the literature, there are a few studies that conducted TQM practices and their impact on innovation, especially soft TQM practices in the industrial sector in Jordan. In addition, there is still a disparity in the results of studies with regard to the impact of TQM practices on innovation; some studies have suggested a relationship between TQM practices and innovation (Martinez-Costa& Martinez-Lorente, 2008; Ooi et al., 2012; Al-Refaie et al., 2011; Zehir et al., 2012; Al-shaar, 2014; Abdul Aziz et al., 2015).

In contrast, other studies have indicated that there is no relationship between TQM practices and innovation (Ahanotu, 1998; Lorente et al., 1999; Prajogo & Sohal, 2001; Abrunhosa & Sa, 2008), due to the different results of studies on the relationship between TQM practices and innovation; this requires further study of the impact of these practices on innovation in industrial sector.

Since the early 2000s, researchers have largely conducted studies on the relationship between quality management and innovation, and several research results have suggested that quality management can be one of the prerequisites for innovation in business (Kafetzopoulos et al., 2015). Zeng et al. (2007) also asserted that, now in the global competitive market, quality and innovation both play a vital role in the survival of companies, and if innovation is part of the company culture, it will lead to competitive advantage and performance enhancement in this company.

Questions of the study :

From the context of the problem statement in the previous section, study question emerged as follow:

Is there any impact of soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement) on product innovation in the industrial companies that operating at AIE?

What is the level of innovation (product innovation) in the industrial companies operating at AIE?

To what extent industrial companies at AIE implement soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement)?.

Objectives of the study :

The main objective of the study is to explore soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement) and their impact on innovation in terms of product innovation in the industrial companies at AIE. The specific objectives of this study are:

To identify the extent to which soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement) are adopted by the industrial companies at AIE.

To examine whether soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus and continuous improvement) have a significant impact on product innovation in the industrial companies at AIE.

Significance of the study :

The importance of this study emerged from the role of TQM and innovation role in ensuring success and survival of the industrial companies. TQM is considered a strategic key for achieving continuous success, competitive advantage and improved performance in industrial companies

Innovation has an important influence in improving the performance of companies; it considers an urgent need imposed by economic, social, political, technological and competitive changes. Thus, innovation plays a prominent role in helping companies to make fundamental changes in goods and services to meet the needs and wishes of customers and responding to the demands of a competitive environment.

- Theoretical significance:

Keeping up with the modern management trends that emphasize the promotion of innovation as a tool to achieve a sustainable competitive advantage.

This study considers the first of its kind according to the researcher's knowledge, which dealt with the impact of Soft TQM practices on product innovation in industrial companies in AIE, Therefore, the researcher hopes that this study will provide a scientific contribution to the literature to be used for future studies.

- Practical significance:

The expected study findings may contribute to better understanding of Soft TQM practices which reflects the managerial and human aspects and their effect on product innovation in the industrial companies at and outside AIE in Jordan.

Managers of the manufacturing sector may make benefit from the results of this study use when they aim to improve their company's innovation performance with the help of quality management practices.

Hypotheses of the Study :

Based on the study problem, objectives and questions, the study seeks to test the following hypotheses:

The main hypothesis H01: There is a significant impact of soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement) on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

The main hypothesis is divided into the following sub-hypotheses:

H01.a: There is a significant impact of leadership on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

H01.b: There is a significant impact of employee training on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

H01.c: There is a significant impact of employee empowerment on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

H01.d: There is a significant impact of teamwork on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

H01.e: There is a significant impact of customer focus on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

H01.f: There is a significant impact of continuous improvement on product innovation in the industrial companies operating at AIE at ($\alpha \leq 0.05$) level.

conceptual Model of the Study :

The present study seeks to achieve its main objective of verifying the effect of Soft TQM practices on innovation in the industrial companies that operating at AIE area. The dimensions of the main variables in this study were determined by looking at the literature review and previous studies. These dimensions are:

The Independent Variable in this study is Soft TQM practices: leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement, they was chosen by referring to studies: (Urban and Toga, 2017; Zhang et al., 2016; Al-shaar, 2014; Abdul Aziz et al., 2015).

The Dependent Variable in this study is innovation focusing on product innovation, this variable was selected by referring to studies: (Urban and Toga, 2017; Al- Shaar & Al-Najar ,2015; Al-shaar, 2014; Ooi et al., 2010).

The conceptual framework of the study was developed based on the following studies: (Urban and Toga, 2017; Zhang et al., 2016; Al-shaar, 2014; Abdul Aziz et al., 2015), as shown in figure (1.1)

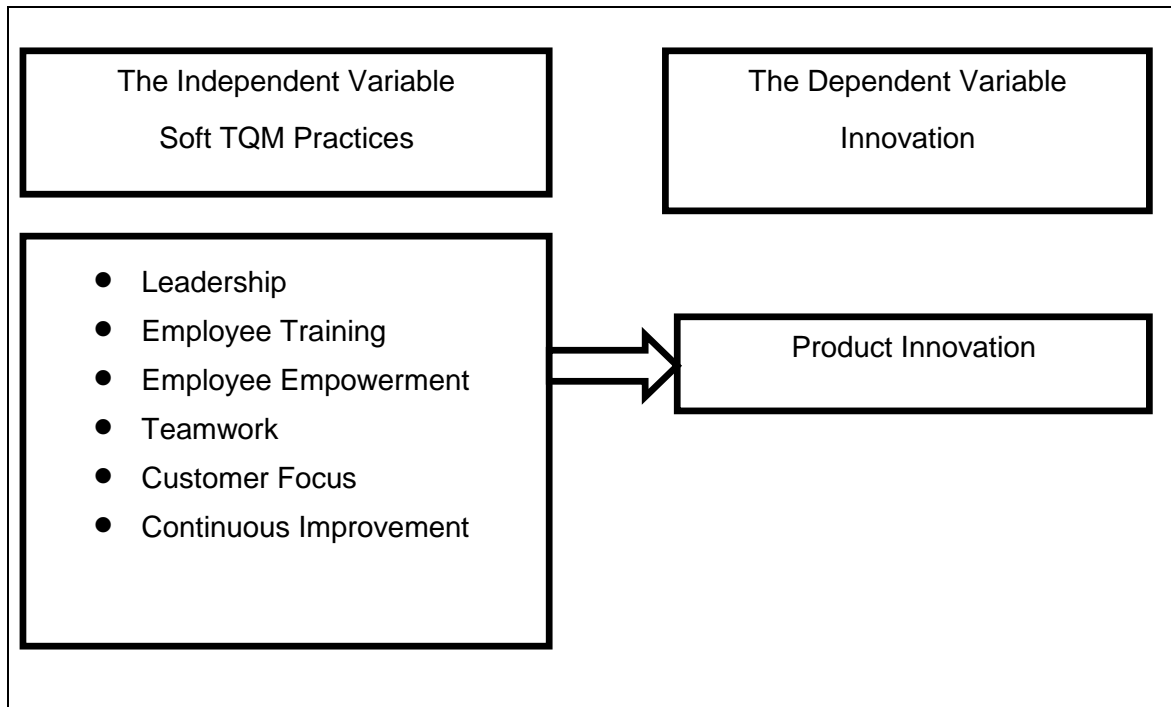


Figure (1.1): Study Model

Source: Prepared by the researcher using the studies: (Urban and Toga, 2017; Zhang et al., 2016; Al-Shaar, 2014; Abdul Aziz et al., 2015).

1.8 Operational Definitions of the study variables

The operational definitions below developed based on the literature review that was conducted for this study.

-Independent variables Definition :

TQM: A management approach that aims to achieve long-term success by continuously improving the quality of products and services, improving processes, employees, environment and involving all employees to achieve customer satisfaction.

Soft TQM Practices: TQM practices that represent the managerial aspects of TQM which concentrated on behavior sides including training for employees, management leadership, employee empowerment and customer satisfaction.

Leadership: The involvement of top management in developing a strategy based on quality improvement and the encouragement of employee involvement in improving the quality of products and processes.

Employee Training: Theoretical & practical preparation for performing a job, employee training is increasingly required to assist the work force in using modern techniques, tools, strategies and materials in their jobs.

Employee Empowerment: Is an environment that lets employees giving their opinions and managing their works by giving them the authority to make decisions that related to their work, thus contributing to improve their performance.

Teamwork: The cooperation of all employees in the companies to make work done. Also meaning the sharing of knowledge and information between the employees in all departments in the company to facilitate work.

Customer focus: Customer focus, which is the most important part of production, means producing and delivering products and services that fulfill customers' present and future needs and expectations, it is also refers to exceeding customers' expectations in order to ensure long-term organizational success and survival.

Continuous Improvement: An ongoing process of improving products, services, processes, equipments, employees to achieve a high level of quality.

-Dependent variable :

Product Innovation: Is the creation and subsequent introduction of a good or service that is either new, or an improved version of previous goods or services

Limitations of the study :

This study was conducted on Industrial companies operating at king Abdullah II Bin Al-Hussein Industrial Estate (AIE) in Sahab city.

The study covers twenty industrial companies from different industries sectors that operating at AIE.

The time limits of this study are between 2017-2018.

Delimitations of the Study :

The study has faced some difficulties, which are:

This study is considered one of the fewest studies that examined the impact of the Soft practices of Total Quality Management on product innovation in Jordan, especially in the industrial city of Sahab. Therefore, the researcher faced difficulty in finding more studies similar to this study that can rely on comparing the results.

Lack of cooperation from some companies in accepting the distribution of the questionnaire to avoid disclosing the facts of their work.

The population of the study is small , it may affect the findings of the study.

Overview of the thesis :

The structure of this study consists of five chapters, which are summarized as follow:

Chapter One: It represents the general framework of the study, which includes; the study background, study problem, study objectives, study importance, study hypothesis, conceptual model and operational definitions of the study variables.

Chapter Two: It represent the literature review, which includes; the evolution of Total Quality Management (TQM), quality definition, TQM definition , TQM practices, Soft TQM practices, advantages of adopting TQM, The challenges that facing implementation of TQM, Innovation, product innovation and previous studies.

Chapter Three: It represents the study methodology, which includes;

Study design, Study sample, Data collection sources, research instruments (study tools), as well as validity and reliability of the tool.

Chapter Four: It represent data analysis, which includes;

Characteristics of the study sample, descriptive statistics and the hypothesis testing.

Chapter Five: It represents discussing the results of data analysis, which includes; results discussion and conclusions, study recommendations and future research suggestions.

The following figure (1.2) summarized the thesis structure:

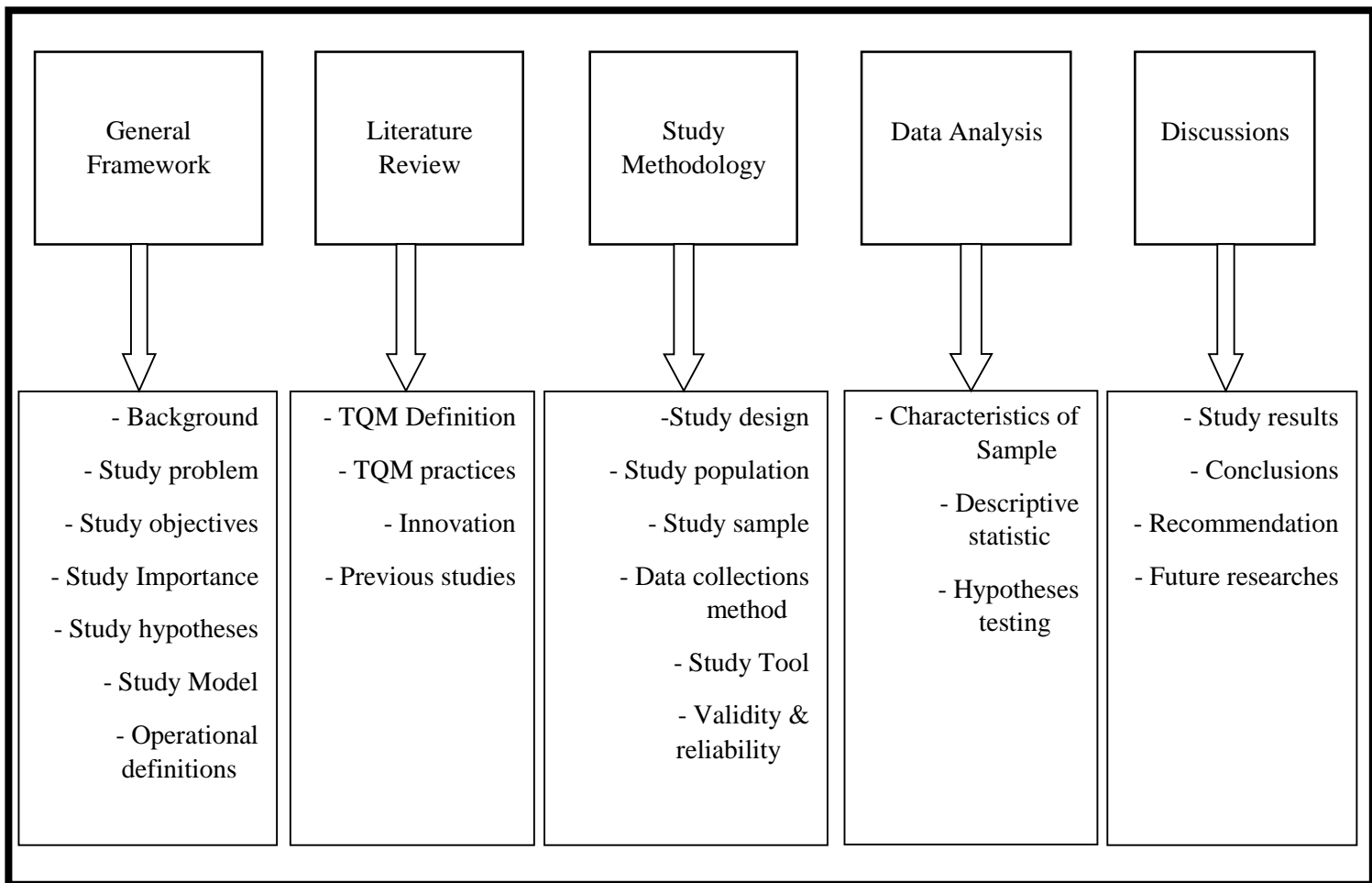


Figure (1.2) : The structure of the thesis

Source: The researcher.

Chapter Two: Literature Review

Preview :

Total Quality Management (TQM) is an approach focuses on quality that spread and adopted in various business organizations (Zehir et al., 2012). As a term , it was used first in 1983 by Feigenbaum, and became widely used after the half middle of 1980`s when quality became the main factor that overpower the business management practices have started to adopt in order to improve the quality of the products and services they provide to their customers and gain their satisfaction. TQM became a critical determinant success or survival of an industry especially in the light of the heightened competitive environment due to globalization, technological changes and a shortage of resources. Therefore, if an organization attends to survive, need to innovate more and produce higher-quality products (Martinez-Lorente et al., 1998).

This chapter includes two parts: the first part discusses the evolution of TQM, Quality definition, TQM definition, TQM practices, soft TQM practices, the importance and the benefits of TQM implementation, the challenges facing TQM implementation, definition and innovation types. The second part discusses the relationship between TQM and innovation, including also the previous studies that link between TQM practices and innovation.

The Evolution of TQM :

Many scholars agreed TQM has been developed throughout four stages. Goetesch & Davis, (2006) and Talib, (2010) stressed that TQM went through stages: the inspection and corresponding, quality control, quality assurance and total quality management.

Inspection and corresponding stage is called the phase of examination. It represents the beginnings of the quality. It does not prevent the error, but it is an attempt to detect and fix it. The main concern of this stage was separate the defective products among the accepted products, it is a stage of checking that the manufactured products met the specifications. The second stage is called quality control. This stage started in the early twentieth century, with the advent of statistical methods for quality control. Then it focused on the standardization and unification of production as a means to prevent errors when processing product or service, the primary objective of quality control is to prevent mistakes and avoid them before they occur. Quality assurance was the third stage. The main concern of this stage was to include all efforts to prevent the occurrence of errors, and thus it relies on a system based on preventing the errors from the outset, which is known as zero defects principle. The fourth stage is Total quality management. Customers become the main concern. It is characterized by the wishes of customer and interest in its wider sense within the organization and achievement. It has become necessary to search for the philosophy of organizational control of the organization based on continual improvement in the performance and analyzing problems and solving them, in an era of fierce competition, to lead to a radical change in concepts of quality to become a management tool rather than a control tool.

Quality concept definition :

Over the years, growing pressures for improved performance have encouraged the adoption of more comprehensive approaches to reinvent the way business is done and how institutions are run with regard to quality. As a result, many organizations have adopted quality & innovation approaches with varying degrees of success (Raja & Wei, 2014). The hunt for quality has led to the emergence of many philosophies and rocket the race to stand on the edge of competition. Thus, many researchers have dealt with the definition of quality using different concepts and perspectives, though with high degree of similarities within the industrial context (Toga & Urban, 2017). It is, therefore, critical to study the meaning of quality from the understandings of various researchers so that the larger picture of quality management can be well understood.

Juran (1998) builds his quality principles around the practices of quality planning, quality control, and quality improvement. He believes that customers must be the focus of quality planning. His strategies are centered on top management involvement, planning quality improvement project by project, and developing a training program for all employees. He emphasizes the need for continuous process improvement management in producing quality goods and services in customer-focused organizations. As such, Juran defines quality as fitness for use, as opposed to merely meeting specifications.

According to Crosby quality means “conformance to requirements” (Crosby, 1979: 36). Quality and management are linked “costs go down and productivity goes up” as improvement of quality is accomplished by better management of design, engineering, testing and by improvement of processes (Deming, 1986:23). Quality in a product or service is not what the supplier puts in; it is what the customer gets out and is willing to pay for (Drucker, 1986).

Feigenbaum (1991) believes that quality is an organization’s best investment in competitiveness. He defines quality as a way of managing and that customer satisfaction, lower costs, and the effectiveness of human resources are dependent on quality control. In order to improve the quality control process, he stresses the critical aspects of careful planning, product design, customer feedback, and the use of statistical tools. During the life cycle of this quality process, from the first stage of gathering product requirements until the last stage of product delivery, customers’ expectations must be met.

Reeves and Bender (1994) proposed four definitions of quality. The first definition is quality means conformance to specifications; the second definition is quality aims to satisfy or exceed customer’s expectations; the third definition is to achieving excellence standards; and the fourth definition is quality to create value of products, services and process. The International Organization for Standardation (ISO) defined quality as:

The total set of features of a product or service that have the ability to satisfy stated or implied needs (ISO 9000: 2005).

In the light of the previous definitions, it can be concluded that quality starts from the customer, who determines the real requirements of the product or service. Thus, if the product of an organization or the service achieves customer satisfaction through production within high standards and specifications, it will maximize profitability and achieve long-term success.

Total Quality Management definition :

Although attention to the philosophy of TQM has began since the 1950s when Deming developed fourteen principles for its application, there is no specific agreed definition for TQM (Hackman and Wageman, 1995). However; many researchers have proposed several definitions of TQM.

Wilkinson and Wither (1990) defined TQM Using a three-word definition:

Total means every person is involved (its customers and suppliers).

Quality means customer requirements are met exactly.

Management means senior executives are fully committed.

Milakovich (1990) indicated that TQM is a total organizational approach for meeting customer needs and expectations that involves all managers and employees in using quantitative methods to improve continuously the organization's processes, products and services.

Berry (1991) defined TQM process as a total focus on meeting and exceeding customer's expectations and significantly reducing costs resulting from poor quality by adopting a new management system and corporate culture.

Steingrad and Fitzgibbons (1993) described TQM as procedures and techniques aim to reduce defects of a production process/service delivery. Also, from the same perspective (Flynn et al., 1994) appointed to TQM as an integral system aimed to achieve and sustain high quality output, focusing on the maintenance and continuous improvement of operations and defect prevention at all levels and functions in the organization in order to satisfy or exceed customer expectations. This view was supported by Daft (1997) who defined TQM as a concept that focuses on managing the total organization to deliver quality to customers.

TQM can be defined as an integrated strategy to improve the quality of the Organization's products and services (Wageman, 1994). Wolkins (1996) outlined TQM as a tool to integrate fundamental management techniques, existing improvement efforts and technical tools under a disciplined approach focused on continuous improvement (Singh and Dubey, 2013).

Kanji and Wallace suggested that TQM is the organizational culture committed to customer satisfaction through continuous improvement; this culture varies from country to country and from industry to industry but has specific core principles that can be applied to ensure the largest possible market share, increase profits, and reduce costs (Kanji and Wallace, 2000).

According to Heizer and Render TQM emphasizes on the quality that encompasses the entire organization, from supplier to customer, and it emphasizes the management's commitment to leading the organization as a whole to consistently move towards excellence in all important aspects of the customer's products and services (Heizer and Render, 2006).

Antony et al. (2002), Prajogo and Sohal (2006), Lee and Chang (2006) and Sadikogla (2008) described TQM as a holistic approach to continuous improvement of products, services, processes, environment and employees to meet customer needs, maximize profitability and improves the organizational performance.

There is another definition of TQM, which is a management philosophy focused on three principles in order to achieve high performance and quality of the process, these principles are related to: customer satisfaction, employee participation, and continuous improvement in performance (Krajewski et al., 2007)

According to Rahman (2012) TQM is a management approach to improve organizational performance that includes technical and behavioral aspects. Also Arshad (2015) appointed that implementation of TQM leads to development of a high quality of products and services which improves organizational performance.

Chaichi and Chaichi (2015) also introduced another definition of TQM which states that TQM is an main strategy used by human resource for maintaining competitive advantage and is a way of conducting organizations to improve the overall effectiveness as well as performance towards achieving outstanding status.

From the above, TQM can be defined as an integrated management approach to business performance that attempts to maximize the competitive position of the organization by continuously improving the quality of its products, services, improving employees, operations and environment, and involving all employees in order to achieve customer satisfaction.

Total Quality Management practices :

The opinions and ideas of authors and writers on the practices of TQM have varied and have been described in various ways in literature as practices (Dean and Bowen, 1994; Flynn et al., 1995). Also known as elements (Waldman, 1994), factors (Powell, 1995), techniques (Hullsten and Kelfsjo, 2000), processes (Reed et al., 2000), constructs (Behara and Gundersen, 2001), and principles (Narrow, 1997).

A number of researchers (Curkovic et al., 2000) suggested an explanation of TQM principles or dimensions that consisting of three key elements, customers focus, continuous improvement and total involvement. Saraph et al. (1989) described it as important factors which are: The role of senior management at departmental level, quality policy, role of quality circle, training, product and service design, supplier quality management, process management, quality data and reporting, employee relations.

Extensive literature review of the previous studies on TQM have investigated about what are the key practices or facilitators for successful TQM implementation , the researcher summarized these practices as shown in the below table (2.1):

Table (2.1): Key practices for the success of TQM

Previous studies	Key practices for the success of TQM
Kanji and Wallace, 2000	Top-management commitment, customer focus and satisfaction, quality information and performance measurement, HRM, employee involvement, teamwork, process management, quality assurance, zero defects and communication.
Brah et al., 2000	Top-management support, customer focus, employee involvement, employee training, employee empowerment, supplier quality management, process improvement, service design, quality improvement rewards, benchmarking, cleanliness and organization.
Antony et al., 2002	Top-management commitment, customer focus, employee involvement, employee education and training, supplier corporate, continuous improvement, product/service design, quality policies, quality data and reporting, communication for quality improvement, customer satisfaction.
Sila, 2007	Leadership, customer focus, information and analysis, HRM, process management and supplier management.
Bayraktar et al., 2008	Leadership, vision, measurement and evaluation, process control and improvement, program design, quality system enhancement, employee participation, recognition and awards, education and training, customer focus and other stake holders focus.
Sadikoglu and Zehir, 2010	Leadership, training, employee management, information and analysis, supplier management, process management, customer focus and continuous improvement.
Fotopoulos and Psomas, 2010	Leadership, strategic quality planning, employee management and involvement, supplier management, customer focus, process management, continuous improvement, information and analysis, knowledge and education.
Talib and Rahman, 2010	Top-management commitment, employee involvement, employee encouragement, employee education and training, supplier management, continuous improvement and innovation, quality information and performance
Kumar et al., 2012	Management commitment, customer satisfaction, continuous improvement, teamwork, employee empowerment, training, feedback and effective communication.
Gherbal et al., 2012	Communication to improve quality, organization management, training and development, Employee involvement and recognition, quality culture.

Hietschold et al., 2014	HRM, teamwork, top management commitment, process management, customer focus, supplier partnership, training and learning, information and analysis, strategic quality planning, culture and communication, benchmarking.
Dedy et al., 2016	Top management, leadership, communication, customer focus, training and teamwork.
Neyestani & Juanzon 2016	Customer focus, leadership, process management, supplier quality management, employee involvement, training, information and analysis.

Source: (Al-Ghawi, 2014: 23- 24; Aletaiby et al., 2017: 671-672).

TQM practices are classified into two groups: soft and hard TQM practices (Rahman and Bullock, 2005; Abdullah et al., 2009; Fotopoulos and Psomas, 2009; Leavengood et al., 2012), in which soft TQM practices are referred to human aspects and associated with management concepts and principles such as management leadership, customer focus, employee relations and supplier management. While hard TQM practices are related to quality tools and techniques, production and technical methods such as quality data and reporting, product/service design and process management (Vouzas and Psychogios, 2007; Leavengood et al., 2012) .

Psychogios et al. (2009) classified soft TQM practices as: Top-management commitment, total employee involvement, continuous improvement, continuous training, teamwork, empowerment, democratic management style, culture change, whereas hard TQM practices as: statistical process control, quality function development, ISO 9000 series and quality tools.

Abdullah and Tari (2012) indicated that soft TQM practices include: leadership, quality culture, social responsibility, top management support, strategic planning, supplier relationships, employee training, employee involvement, empowerment, communication, recognition, teamwork, customer focus and relation. while hard TQM practices include: production and work process, controlling systems, measurement techniques, just in time, ISO standards, diagrams and charts.

Soft TQM Practices (dimensions) :

Soft practices are long term factors that are related to management issues and aspects and must be addressed in the company's TQM strategy and implementation plan (Lewis et al., 2006a; Vouzas & Psychogios, 2007). Soft practices generally deal with HRM and focuses on behavioral sides including training for employees, management leadership, teamwork, supplier relationship and management, creating value to customers, and achieving customer satisfaction (Lewis et al., 2006b; Gadenne & Sharma, 2009).

Although there is some disagreement about what constitutes the soft and hard elements of quality management, there is a measure of consensus about common soft and hard elements in the studies(theoretical and empirical) that explicitly classify quality management practices as soft and hard, the study focuses on the soft elements and are summarized in table (2.2):

Table (2.2) theoretical and empirical studies of Soft TQM practices

Study	Soft elements
Theoretical studies Rahman (2004)	Leadership, people management (employee involvement, employee empowerment, employee training, teamwork and communication), customer focus, quality planning.
Lewis et al. (2006)	Customer focus, people management (e.g. training, teamwork, employee involvement, communication, rewards and recognition, employee empowerment), top management commitment, supplier management, quality culture, social responsibility.
Empirical studies Flynn et al. (1995)	Customer relationship, supplier relationship, work attitudes, workforce management, top management support.
Ho et al. (2001)	Role of top management, role of quality department, employee relations, training.
Chin et al. (2002)	Strategic planning, leadership, people management (e.g. education and training, employee involvement), organizational culture.
Rahman and Bullock (2005)	People management (e.g. workforce commitment, use of teams, personnel training), shared vision, customer focus, supplier relations
Fotopoulos and Psomas (2009)	Top management commitment, strategic quality planning, employee involvement, supplier management, customer focus, process orientation, continuous improvement, facts-based decision making, and human resource development.
Gadenne and Sharma (2009)	Top management philosophy and supplier support, employee and customer involvement, employee training.
Dubey and Singh (2013)	Leadership, human resource philosophy and systems, relationship management and partners, human resource functions.
Ahmed & Badar (2017)	Leadership, people management and customer focus.

Source: Prepared by the researcher.

The implementation of TQM will not work without the commitment of top management in their focus on quality. Although much has been said about the role of top management, the success of TQM programs is highly dependent on whether both management and staff are provided additional training and education about the quality concepts and initiatives (e.g., the use of quality tools and techniques). In reality, a team-oriented environment is needed to facilitate problem-solving in quality matters at different organizational levels in the organization (Reed et al., 2000).

Companies can achieve their goals by learning the employees about the customer needs and market demands; empower their employees to build a culture of quality improvement and the commitment of continuous improvement of processes at each level in the company. Also, focusing on employee training can be helpful in implementing the quality management in their activities.

Through the study of the field and asking the experts, it is shown that soft TQM variables, leadership, employee training, empowerment, teamwork, customer focus and continuous improvement have more influence on innovation so the researcher chose these variables to measure their effect on innovation. They will be explained in detail as follows:

Leadership :

Leadership has been described as one of the most important practices of TQM, because of its role in identification of the direction and establishment of a vision towards business and high expectations of performance (Al-Hawary & Abu-Laimon, 2013)

The literature review of TQM practices emphasized the responsibility of senior management in establishing and maintaining a better vision of quality (Ahire et al., 1995; Deming, 1986). According to Anderson et al. (1994), leadership vision refers to management's ability to support individuals to adopt a vision and implementation of actions that lead to achieving this vision.

Leadership involves the behavioral patterns which show top management's personal involvement in the quality improvement process, the acceptance of responsibility for quality performance and visibility in developing and sharing the vision and quality goals with the entire organization (Solis et al., 1998). Also, Prajogo and sohal (2006) emphasized that leadership reflects the extent to which the management is able to set goals and strategies for quality, allocate the necessary resources to achieve these objectives and participate in improving and achieving quality performance.

Other researchers as (Juran and Gryna, 1993; Karaszewski, 2010; Rui et al., 2010) added that leadership helps to establish quality policies, goals, and to provide resources, problem-oriented training and to stimulate improvement which is vital to TQM implementation and its effect on firm performance. In another study (ESá and Kanji, 2003) argued that the main challenge for the top management is to coordinate the relationship among organization's vision, mission statement, values and strategies, as the vision and mission statement provides the direction that leads to improved performance. The studies confirmed that the top management must have to create a quality vision, also communicate the vision in all the organization's departments, and develop a quality culture where employees are involved in quality decisions and remove the resistance to change, concentrating on the customer needs and expectations, and encouraging improvements. To achieve all these, the top management needs to actively involved and become more committed towards quality and give value to the quality programs (Anupam et al., 2011; Kanji, 2002; Lau and Idris, 2001; Zairi, 1999).

Previous studies have found that leadership improves operational performance (Ahire and O'Shaughnessy, 1998; Dow et al., 1999; Samson and Terziovski, 1999; Abdullah et al., 2011), inventory management performance (Abdullah et al., 2011), employee performance (Dow et al., 1999), innovation performance (Abdullah et al., 2011; Kumar et al., 2012), social responsibility and customer results (Parast and Adams, 2012), financial performance (Flores et al., 1997) and overall firm performance (Powell, 1995).

When the leadership is committed towards quality, the organization builds a distinctive capability that makes it adapt easily to a changing environment (Yusr et al., 2013). This view is supported by Toga & Urban (2017) who indicated that the successful implementation of the leadership principle help to creates an environment that encourages working as one team, motivates sharing of information among employees which enabling them to learn, change and quickly respond to the changing world.

Many studies had investigated the relationship between leadership and innovation, for example; Amabile et al. (2004) proposed that leader behavior is a key feature of the work environment for creativity and innovation. Leadership increases employees' intrinsic motivation to engage in innovative activities (Jansen et al., 2009). Also Bass (1994) and Howell & Avolio (1993) indicated that leaders encourage employees to think about old problems in new ways, increase their willingness to perform beyond stated expectations, and challenge them to adopt innovative approaches at work.

Based on the above literature review, it is concluded that planning process is the responsibility of top management that should be comprehensive and structured, the vision and mission statements also should be well communicated to all employees in the organization and in return employees will be encouraged in their commitment to quality. This commitment to quality from top management and employees will lead to innovation performance for the organization.

Employees Training :

Deming (1986) stressed the importance of education and training for continual updating and improvement. Investment in education and training is vitally important for TQM success; employees should be regarded as valuable long-term resources worthy of receiving education and training throughout their career (Zhang et al., 2000).

Employees training in quality-related concepts are prerequisites for the effectiveness of quality improvement activities .An organization's competitive advantage lies on the skills and abilities of its employees (Chang et al., 2008).

Elnaga & Imran (2013), described training as process of learning thorough which employees improve their current level of understanding, abilities and capabilities that they need to carry out their duties well for the achievement of organizational goals.

In other words, training is a learning process which mainly focuses on the gaining of knowledge, enhancement of skills, identifying the rules, or correcting the attitude or behavior to enhance employee performance (Sabir et al., 2014). Due to fast increase in business competitions, it is almost significant for every organization to develop the knowledge and skills of employees to achieve everlasting performance, gaining competitive advantage and achieving continuous development (Singh et al., 2012). Training not only improves the skills of employees but also enhances their thinking capacity and vision to take better and fruitful decision in no time and in a creative manner (Ahmad & Manzoor, 2017).

Pheng and Jasmine (2004) emphasizes that training is a very important aspect in the implementation of a successful TQM program as it provides an opportunity to inform employees about the goal of TQM and also provide workers with the skills and knowledge needed to achieve those goals. Training also provides an opportunity to empower and motivate employees, reducing employee resistance and increases the chances of TQM success.

Training refers to a planned effort by a company to facilitate employees' learning of job-related competencies, including knowledge, skills, or behaviors that are critical for successful job performance (Mondy & Mondy, 2013). Training and education make employees more productive and helps increase employee's skills and knowledge to increase job satisfaction (Gagnon et al., 2013). From the point of view of both (Sadikoglu and Olcay, 2014), effective training will improve employees' loyalty to the firm, motivation, and job performance. They believe that if employees are trained on producing high quality products and or services, their full participation in the production stage would be more effective. Therefore, customer satisfaction will also increase.

Training represents a planned efforts in the organization that seeks to develop the skills, abilities and knowledge of its employees, for the success of the work, Training also aims to provide employees with different and renewable methods of their work and also to change their behavior in a positive manner, thus raising the level of performance, productivity and innovation level of the organization.

Employee empowerment:

Employee empowerment is an important policy that several organizations practice to enhance the capabilities and participation of their employees as empowered employees feel competent in their job responsibilities (Saifullah et al., 2015).

Employee empowerment means to provide the employees with resources, responsibility and the authority to plan, organize, monitor and to make decisions about their works (Karia and Ahmad, 2000). Also, defined as a process of decentralizing decision making in an organization, whereby managers give more discretion and autonomy to the front lines employees (Lincoln et al., 2002). Employee empowerment lets employees to give their opinions and manage their work. Having an opportunity to share their knowledge, views on the processes motivates the employees to take up the responsibilities of the job (Hasan & Sivaprakasam, 2010).

Kannan and Tan (2005) indicate that employee empowerment aids in promoting innovative thinking. Employees that take part in the company's development and manageability will offer many insights and critical thinking capabilities when obstacles emerge. In addition to that, as the employees meet specific difficulties or discover enhancements in approaches, methodology or items, they will enhance innovative performance at the product and process level which allow companies to achieve long-term success and maximize its profits.

Evans and Lindsay (2008) explained that empowerment helps generate a commitment to the organization and develop a sense of pride. It presents an opportunity to employees to develop them and advance their careers. It allows employees to use their skills and talents to the maximum, and hence promotes the spirit of self-determination.

Employee empowerment is a philosophy associated with real benefits for an organization. It is underlying principle of giving employees the freedom, flexibility, power to make decisions and solve problems make employees feeling energized, capable and motivated to participate in change, development and innovation. . As a result of these management practices, quality of work increases, employee satisfaction increases, cooperation increases, employee productivity rises, and organizational costs decrease. All of these benefits enable an organization to achieve its vision, strategy and goals which ultimately leads to achieve competitive advantage.

Teamwork :

Teamwork was earlier studied as employees combine their efforts to achieve a common objective by keeping in view the interest of the overall group instead of individual interests (Hanaysha, 2016).

Hughes & Jones (2011) indicated that teamwork is a set of behavioral skills working together to generate best outcomes (Hughes & Jones, 2011). Other researcher mentioned that teamwork is an essential aspect for the success of the organization; it leads the organization to communicate with the goal and mission of the organization, encourages creativity, shares information, builds trust and openness and empowers employees (Griffin et al., 2001).

In addition to that teamwork is necessary because it involves the collaboration between managers and non-managers, between functions, as well as with customers and suppliers (Dean and Bowen, 1994). Within the context of TQM, teamwork is an important outcome and a condition for continuous improvement. It facilitates collaborative efforts to solve quality problems (Waldman, 1994).

Another opinion was mentioned by other researchers that teamwork helps maintain competitive advantage in the face of challenges caused by several world events and also by international marketplaces (Salas et al., 2010)

Usrof and Elmorsey (2016) indicated in their research about the relationship between HRM and TQM that teamwork is an important aspect of management strategy in creating a positive working atmosphere. In other words the total cooperation and participation of employees in activities will achieve unified organizational goals. It was added that if a team or groups perform better their members develop a strong sense of positivity towards goals (Livi et al., 2015).

Customer focus :

Customer focus represents all activities related to direct contact with customers and gathering information about their expectations (Dean and Bowen, 1994). Customer focus and satisfaction consider an essential parts of TQM as many researchers defined quality as meeting customer requirements and satisfying customer needs (Ishikawa, 1985; Berry, 1991; Flynn et al., 1994; Kanji and Wallace, 2000).

Evans & Lindsay (1996) stressed the importance of customer focus, and implied that any business has four goals: to satisfy its customers, to achieve higher customer satisfaction than its competitors, to retain customers in the long run and to gain market shares. Customer focus also refers to exceeding customers' expectations in order to ensure long-term organizational success and survival (Deming, 1986; Dean and Bowen, 1994).

Nowadays many firms considered customer a real strategic partner, and try to develop long-term relationships with him, which help to achieve competitive advantage. The modern approach to marketing emphasizes the importance of communication with customers and a good understanding of their needs and desires as a key partner in product specification (Zakuan et al., 2008) which allows firms to align their strategy with their technological capabilities and to channelize their resources into innovative ideas which could satisfy customer demands (Perdomo-Ortiz et al., 2006).

It is important for companies to have up-to-date information on customer requirements to help reduce the cost of redesigning products because they do not meet the needs and desires of customers. This means that good customer relationships and communication contribute to improving the quality of data related to their requirements (Forza & Flippini, 1998; Zu et al., 2008).

From the above literature it concluded that focusing on customer requires extensive efforts from the companies, it needs to create a perceived value for customers, provide them with high quality products at convenient prices in order to get their loyalty.

Continuous Improvement :

Continuous improvement is one of the main principles of TQM philosophy as indicated by (Heizer & Render, 2006). The origin of continuous improvement refers to a Japanese concept "Kaizen" which means increase improvement of the ongoing processes. The continuous improvement process includes employees, equipments, supplies, material, operations and producers (Temponi, 2005).

Continuous improvement originates from the belief that mistakes can be avoided and defects can be minimized (Liker & Hoseus, 2010). Continuous improvement refers to searching for never-ending improvements and developing processes to find better methods in the process of converting inputs into outputs. By improving interlinked processes, a firm can do a better job of satisfying customers' needs and expectations (Stevenson, 1996; Dean and Bowen, 1994).

Deming (1986) define continuous improvement as removing the defects and continuously improving the products features and service quality. He presented the cycle for continuous improvement known as the P-D-C-A cycle, expresses four major steps (Al-Ghawi, 2014):

P (plan) – collecting of data to identify the issues that require improvements and ways to obtain them.

D (Do) – implementing the plan by using statistical methods such as experiment run, test group, etc.

C (check) - analyzing and evaluating the results and compared to the expected outcomes, make adjustment if necessary.

A (Act) – depending on the results from the check step, deciding what changes to make in order to improve the process.

The Deming cycle considers a good strategy for self-assessment; moreover it ensures a realistic, proactive and measurable approach to quality.

Continuous improvement is a TQM dimension that directs a firm in its daily management, involving the continuous effort from every individual to achieve firm's goals of improved quality, satisfying customer's needs and ultimately enhancing the firm's performance (Ooi et al., 2007). In quality management settings work processes are constantly reviewed which reduces mistakes and waste of materials that improves the organizational effectiveness (Anderson et al., 1994; Spencer, 1994; Walton, 1986). Continuous improvement endorsed by organizations stimulates organizational members for innovations and quality performance (Prajogo & Sohal, 2003).

Continuous improvement involves improvement at the level of individuals, processes, materials and functions. Firstly, Personnel-level improvement is the continuous education and training of staff to provide them with the knowledge, skills and capabilities necessary to keep up with technological developments and improve their ability to make problem-solving decisions by empower them. Secondly, at the level of process and functions, the improvement involves the use of modern techniques and the use of advanced software programs to develop processes for the production of products and services. Finally, the improvement of the materials requires using high quality materials in the products manufacturing.

Advantages of adapting TQM :

The quality improvement process leads to achieve a continuous success in companies that implement TQM approach (Schonberger,1994). He indicated that the implementation of TQM strengthened the competitive position of companies as long as the focus of these companies is to provide the product or service of high quality to the customer and thus increase production and reduce costs. Beside that it helps the company to achieve its goals as increasing the growth, maximizing profits and optimizing the investment of its resources, furthermore it Increases the work efficiency by reducing operational errors, inventory waste and reducing customer-related problems.

Kumar et al., (2012) also mentioned that the implementation of TQM in organizations Increases customer loyalty, motivate for employees, organizational effectiveness and profitability and competitiveness.

Rust and others insured that the use of relevant administrative principles and concepts such as TQM principles give many advantages to companies (Rust et al., 1995), they saw that the application of TQM approach in companies leads to improve the quality of services and goods, upgrade performance, reduce operating costs and increase the ability of companies to survive and continue.

In addition to that, employees gained some benefits by their commitment to TQM implementation (Singh et al., 2012), it gives employees time and opportunity to use their expertise and abilities, develops their skills through their participation in the development of working methods and procedures, Provides the necessary training and incentives for their efforts to do their jobs.

Challenges facing implementation of TQM :

In spite of the advantages of implementing TQM, it does not negate the existence of challenges facing the application of TQM.

Many researchers have studied the challenges that may lead to unsuccessful implementation of TQM. Antony et al., (2002) indicated that the lack of awareness of quality at management level and lack of employee involvement are essential reasons for failure of TQM implementation. In addition to that Rahman et al., (2011) noted that there are barriers in the implementation of TQM, including: lack of planning for quality, top management long- term commitment of implementing TQM, lack of proper training and inadequate use of empowerment and teamwork,

Goetsch and Davis (2010) described these challenges as obstacles to the success of TQM which are: inadequate HR development, lack of planning for quality and customer focus.

Talib and Rahman (2015) indicated that there are many barriers leads to TQM failure such as: Lack of proper training and education, employee's resistance to change, inadequate use of empowerment and teamwork, lack of top management commitment, lack of coordination between department, no benchmarking, poor planning, lack of communication, attitude of employees toward quality, lack of continuous improvement culture and human resource Barriers.

Innovation :

Different definitions are given in various studies; innovation has been defined as the adoption of new idea or behavior that is new to the organization (Daft & Becker, 1978; Damanpour, 1988, Jimenez-Jimenez & Sanz-Valle, 2011).

According to Crossan & Apaydin (2010), innovation is the production or adoption, assimilation and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. In addition to that Belliveau et al. (2002) indicated that in some cases firms have to create new ideas of product or service, and this act of generating new ideas include invention as well as the work required to bring an idea or concept into final form in order to gain competitive advantages.

Other studies (Hage, 1999; Lafley & Charan, 2008) defined innovation as a new idea into benefits, revenues and profits. Innovation is one of the key determinants of the long term success of the business in a dynamic market environment. Moreover, innovation helps the firms to deal with the changing external environment (Baker & Sinkula, 2002; Darroch & McNaughton, 2003).

According to a rather broad definition by Baregheh et al. (2009), Innovation is the multi-stage process whereby organizations transform ideas into improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.

Innovation generally refers to changing processes or creating more effective processes, products and ideas. For businesses, this could mean implementing new ideas, creating dynamic products or improving existing services. Innovation can be a catalyst for the growth and success of companies, and help to adapt and grow in the marketplace. Successful innovation should be an in-built part of business strategy, which create a culture of innovation and lead the way in innovative thinking and creative problem solving.

-Innovation types :

Innovation refers to new applications of knowledge, ideas, methods, and skills that can generate unique capabilities and leverage an organization's competitiveness (Andersson et al., 2008). This definition reflects a broader view of innovation by covering both administrative and technological innovation.

In a global market, firms should have the ability to identify new chances, and to reconfigure and shield technologies, competences, knowledge assets, and complementary assets to accomplish a sustainable, competitive advantage (Teece, 2000).

It is necessary to understand types of innovation and its different features, because a specific type of innovation requires an organization to demonstrate unique and sophisticated responses (Bon & Mustafa, 2013). Innovation types are classified into: Technological, administrative; incremental, radical, product and process innovation (Zhao, 2005).

Technological innovation is defined as the adoption of new technologies that are integrated into products or processes which including methods for developing new products or services, changes in the techniques used by companies and changes in production methods (Yonghong et al., 2005). While administrative innovation refers to the implementation of new ideas improve organizational processes, routines, structures, or systems (Elenkov, et al., 2005). Incremental innovation refers to minor changes of existing technologies in terms of design, function, price, quantity, and features to meet the needs of existing customers (Garcia & Calantone, 2002), while radical innovation is defined as the adoption of new technologies to create a demand not yet recognized by customers and markets (Jansen et al., 2006)

Product innovation is creating a new good or service or improved on existing goods or services, while Process innovations, on the other hand, is focusing on improving the effectiveness and efficiencies of production (Burgelman et al., 2009).

In this study the researcher focuses on product innovation.

- Product Innovation:

Product innovation is seen in new outputs or services that are introduced for the benefit of customers, and it is perceived as the most critical factor contributing to a firm's competitive advantage (Casadesus-Masanell & Zhu, 2012; Vaccaro et al., 2012)

Some researchers believe that the company in order to be able to offer new products frequently has to continue to innovate and should focus its strategy on the functions of research and design and development of the product in a prominent and exceptional and have the ability to modify or develop production equipment (Evans, 1995).

Product innovation refers to changes in products offered to customers by introducing new goods and services, improving product characteristics or improving the purpose of the product use, including improvements in product technical specifications or materials involved in product manufacturing (Gunday et al., 2011)

Product innovation can be categorized into radical innovation and incremental innovation. The radical product innovation means to provide products that are substantially different from the current products marketed by the company, while the incremental product innovation refers to modifying or improving the product to keep up with changes in customer requirements (Reichstein & Salter, 2006).

It is clear from the above that product innovation is to come up with new ideas to produce new products or to improve current products to meet the needs and desires of customers and to achieve the competitive advantage of the organization.

The Relation between Soft TQM practices and Innovation :

Since the early 2000s, researchers have largely conducted studies on the relationship between quality management and innovation, and several research results have suggested that quality management can be one of the prerequisites for innovation in business (Kafetzopoulos et al., 2015).

Zeng et al. (2007) also asserted that, now in the global competitive market, quality and innovation both play a vital role in the survival of companies, and if innovation is part of the company culture, it will lead to competitive advantage and performance enhancement in this company.

Numerous companies which have benefited from innovation increased their profits and market share. But the important point is that, a firm cannot be successful with innovation if it cannot produce products that meet acceptable quality standards (Costa & Lorente, 2008) because of that TQM is a good way of improving quality while facilitating the innovation process (Prajogo & Brown, 2004). Implementation of a Total Quality Management (TQM) system enhances the innovation process in organizations due to TQM elements such as continual improvement or customer focus (Baldwin & Johnson, 1996).

The TQM dimension of customer focus persuade firms to look for new customer needs and expectations and therefore direct firms to be innovative in terms of exploring new products on continual basis in order to fulfill market's changing demands (Juran, 1988). To do so firms needs to be creative to exceed the needs and expectations of their customers. This strategy is closely related with innovation. Similarly, continuous improvement motivates change and creative thinking in business work. Also, TQM dimensions like employee empowerment, teamwork play important part in determining the success of firm's innovation (Prajogo & Sohal, 2001). The firms that implement TQM practices will perform better in distinguishing their products and offering better services. The TQM dimension leadership motivates employees to present new ideas for solving problems for developing new products or services (Prajogo & Sohal).

The nature of the relationship between TQM and innovation performance is still a much-debated issue; some researchers state that the relationship is positive while others indicate otherwise.

Quality management researchers emphasized that exploring the relationship between quality management and innovation helps employees to develop a broader understanding of the rules of management practices in innovative environments (Prajogo & Sohal, 2001).

Pandey & Sharma (2009) said that innovation is influenced by diverse factors such as people, top management leadership, organizational structure and culture. From a positive perspective, quality management scientists stated that the determinants of innovation are clearly related to quality management practices (Perdomo-Ortiz et al., 2006).

Researchers who support the notion that the relationship is positive have identified customer satisfaction as one of the core elements of TQM practices because it creates the momentum for organizations to be more innovative in developing and launching new products or creating new services (Hoang et al., 2006).

Pekovic and Galia's (2009) study has concluded that TQM improves innovation performance, putting specific emphasis on the contribution of dimensions to create an environment and culture that supports innovation. Moreover, quality systems improve innovation in dimensions such as customer orientation, employee involvement, human resources management, leadership, access to tools, meeting frequency, motivation, and team spirit.

Santos-Vijande & Alvarez-Gonzalez (2007) have also confirmed that TQM strongly influences technical and administrative innovation, regardless of turbulence in the market in which the organization operates. As pointed out by these authors, the implementation of TQM in terms of people management and actively involving employees in organizational management may influence the company's basic mission and vision as it relates to their innovation performance. Furthermore, a similar study by Abrunhosa & Moura (2008) on the footwear industry in Portugal has also discovered that TQM philosophies such as communication, supportive people management practices, and teamwork relate positively to the adoption of technological innovation. Also, Prajogo et al. (2008) found positive and significant relationship between TQM practices and product innovation.

On the contrary, researchers who support the idea that TQM is correlated negatively with innovation, Lorente et al. (1999) argue that customer focus is related to product conformance or and not to the latest or most innovative product. Prajogo & Sohal (2001) also support this argument; they indicated that companies which are focusing on customer requirements and trying to satisfy them may lead these companies to ignore the search for innovation and new solutions.

In addition to that some researchers have found that people involvement and teamwork

Previous studies

Several related studies were conducted on the impact of TQM practices on innovation. The main studies are:

A study by Urban & Toga (2017) entitled: Determinants of Quality Management Practices in Stimulating Process and Product Innovations. This study empirically investigated how quality management principles might act as determinants of product and process innovations. The study independent variables are: leadership, customer focus and people management. The results showed that customer focus and leadership have a positive impact on product innovation, but not process innovation. Empirical support also found that people management has a significant impact in both product innovation and process innovation.

A study conducted by Zhang, Feng & Xiang (2016) entitled: The Impact of Quality Management Practices on Innovation in China: The Moderating Effects of Market Turbulence. The study aimed to investigate the impact of QM practices on innovation performance, the investigation was made up of 383 questionnaires from nine Chinese provinces and cities. The study analyzed the moderating effects of market turbulence on the relationship between QM practices and innovation performance. The results showed that QM practices (top management commitment, employee involvement, customer focus, continuous improvement, process flow management and supplier relationships) have a positive effect on innovation performance.

A study by C.S. Long, M.H. Abdul Aziz, T.O.Kowang & W.K.W. Ismail (2015) entitled: Impact of TQM Practices on Innovation Performance among Manufacturing Companies in Malaysia, This study had examined the impact of total quality management (TQM) practices on an organization's innovation performance. The empirical results of this study confirmed that TQM had a positive impact on innovation performance across five measured practices: customer focus, leadership, process management, strategic planning and people management. Furthermore, the three most influential TQM practices are identified as people management, process management and customer focus.

A study conducted by Al- Shaar & Al- Najar (2015) entitled: TQM Applications and their Impact on Technological Innovation. An empirical study on Jordanian Banks. This empirical study aimed to examine the impact of TQM practices (i.e. top management commitment, customer focus, strategic planning, employee involvement and empowerment, teamwork and continuous improvement) with the technological innovation (i.e. product innovation and process innovation) in Jordanian banks. The results of the study showed that there is a statistically significant impact of TQM applications on technological innovation. It was found that comprehensive strategic planning; participation and empowerment of workers, and continuous improvement have had the greatest impact in technology innovation.

A study by Dara Schniederjans & Marc Schniederjans (2015) entitled: Quality Management and Innovation: New Insights on A Structural Contingency Framework. The purpose of the study was to investigate the relationship between quality management aspects and innovation; this study empirically assessed contingency factors including organization size, task and managerial ethics which played roles in moderating the relationship between quality management and innovation. The study variables are social quality management practices (i.e., cross-functional cooperation, cross-training, long-term supply chain relationships) and technical quality management practices (i.e., just in time (JIT) manufacturing and design for manufacturing). Based on an empirical study, it was found that social quality management practices, not technical quality management practices, are positively associated with innovation.

A study by Al-shaar (2014) entitled: Impact of Quality Management Practices on Innovation, an Applied Study on the Jordanian Industrial Organizations. This study aimed at identifying the impact of quality management applications in Innovation namely; product innovation, process innovation and management innovation in Jordanian industrial organizations, In order to achieve its aims ,the researcher adopted an analytical descriptive approach , and designed a questionnaire to measure independent and dependent variables. The independent variables are: management leadership, HRM, relationship with suppliers, relationship with customers, strategic planning and data and reports quality. The results of the study demonstrated that: All applications of quality management affects product innovation, process innovation and administrative innovation, while there is no impact on the relationship with suppliers in innovation Product, as there is no impact of customer relationship and human resource management in process innovation and administrative innovation. The study recommended that organizations should not consider quality management applications as a way to improve quality only; it is a mean to encourage the provision of innovative products.

A study by Abbas Ardestani & Yahiya Amirzadeh (2012) entitled: The Impact of Total Quality Management Practices on Organizational Performance and Innovation Performance.

The main goal of the study is to investigate whether TQM practices impact quality and/or innovative performance. The researchers have investigated eight TQM practices: leadership, employee management, process management, customer focus, supplier management, continuous improvement, factual approach to decision –making and system approach to management. This study used a survey conducted among mid- and upper-level managers of companies in the Tehran. Totally 242 valid questionnaire from 100 companies in Iran are used for empirical analysis of the study. Results show that all TQM practices have a positive relationship with organizational performance and innovation performance.

A study by Cemal Zehir, Öznur Gülen Ertosun, Songül Zehir and Büşra Müceldilli (2012) entitled: Total Quality Management Practices' Effects on Quality Performance and Innovative Performance. The main goal of the study was to investigate whether TQM activities affect quality and/or innovative performance and also defining the effective components on these performance types. Data were collected through a survey in Marmara region. The study found that there is a positive relationship between TQM activities (management leadership, continuous improvement, customer focus, employee management and system approach to management) on innovation performance.

A study conducted by Keng-Boon Ooi ,Binshan Lin, Pei-Lee Teh & Alain Yee-Loong Chong (2012) entitled: Does TQM Support Innovation Performance in Malaysia's Manufacturing Industry?. This empirical study aimed to examine the association of TQM practices (i.e. leadership, customer focus, strategic planning, people management, information and analysis and process management) with the innovation performance as perceived by the managers in Malaysia. The research model is constructed on the basis of established theory and on well-known criteria such as Malcolm Baldrige National Quality Award. Research hypotheses were tested by multiple regression based on a sample of 206 managers working in the ISO 9001:2000 certified manufacturing firms in Malaysia. The results of this study showed that TQM had a significant positive relationship with innovation performance. In particular, the findings of this study showed that process management, strategic planning, people management and customer focus have positive relationships with innovation performance of firms surveyed in Malaysia.

A research by Abbas Al-Refaie, Ola Ghnaimat and Jong-Hwan KO (2011) entitled: The effects of Quality Management Practices on Customer Satisfaction and Innovation: A Perspective from Jordan. This research examined the structural relationships between nine quality management practices: (leadership, quality planning, process management, customer focus, HRM, supplier management, product or service design, continuous improvement and quality tools and techniques) and investigated the impact of these practices on customer satisfaction (CS) and innovation for 130 ISO 9001 certified firms in Jordan. The results showed that leadership and human resource management have a positive effect on innovation.

A study conducted by Lee, Ooi, Boon I Tan & Chong (2010) entitled: A Structural Analysis of the Relationship Between TQM Practices and Product Innovation. The purpose of this study was to examine the relationship between total quality management (TQM) practices and product innovation performance as perceived by managers in electrical and electronics (E&E) organizations in Malaysia. This study was based on empirical data collected from a survey of 125 managers of E&E firms. Structural equation modeling analysis is conducted to test the research questions. Results showed that leadership, strategic planning, customer focus, information and analysis, human resource management, and process management are positively associated with product innovation performance. Information and analysis is perceived as a dominant TQM practice in improving firm's performance of product innovation.

A study conducted by Abrunhosa & Sa (2008) entitled: Are TQM Principles Supporting Innovation in the Portuguese Footwear Industry?. This study aimed to analyze at what extent the introduction of TQM is indeed supporting innovation in the Portuguese footwear industry. The independent variables of the study are: (customer focus, people involvement, continuous improvement). This study is based on empirical data collected from a set of firms by means of a survey instrument; the results revealed that the relationship between TQM principles and innovation is weak and not statistically significant.

A study conducted by Jiang Feng, Daniel I. Prajogo, Kay Chuan Tan, Amrik S. Sohal (2006) entitled: The Impact of TQM Practices on Performance: A Comparative Study Between Australian and Singaporean Organizations. The purpose of this paper was to compare the experience of organizations in Australia and Singapore with respect to the multidimensionality of TQM and its relationship with quality performance and innovation performance. A survey was initially conducted in Australia and replicated in Singapore using the same questionnaire. They obtained a total of 252 responses, 194 from Australia and 58 from Singapore. The respondents were all middle and senior management who had experience and understandings of their organizations' quality management and innovation activities. Results of the survey cross validate that TQM practices take place along several dimensions. Relatively more organic dimensions such as leadership and people management are related more to innovation performance, whilst more mechanistic dimensions such as customer focus and process management are significantly related to quality performance.

A study by Daniel I. Prajogo & Amrik S. Sohal (2006) entitled: The Integration of TQM and Technology/R&D Management in Determining Quality and Innovation Performance. The purpose of this study is to examine the impact of the integration between TQM and technology/R&D on quality and innovation performance. TQM practices that involves in this study are: leadership, strategic planning, customer focus, information & analysis, people management and process management. The empirical data was collected from 194 Australian organizations and analyzed using the Structural Equation Modeling (SEM) technique. The study concluded that no significant direct relationship between TQM and innovation, they explained that TQM cannot affect innovation without integrating with other key resources of innovation, such as technology and R&D.

A study conducted by Dinh Thai Hoang, Barbara Igel and Tritos Laosirihongthong (2006) entitled: The Impact of Total Quality Management on Innovation Findings from a Developing Country.

This study investigated the relationship between total quality management (TQM) practices and innovation performance in the Vietnamese industry, the TQM practices that involved in the study are: (top management commitment, employee involvement, employee empowerment, education & training, teamwork, customer focus, process management, strategic planning, open organization, service culture, information and analysis system). The results confirmed that TQM practices have a positive impact on the firm's innovativeness. It discovered that not all TQM practices enhance firm innovativeness. Only leadership and people management, process and strategic management, and open organization showed a positive impact on the firm's innovation performance.

A study by Singh and Smith (2004) entitled: Relationship Between TQM and Innovation: An Empirical Study. This study investigated the relationship between TQM components involving practices of leadership, customer focus, relations with suppliers, employee inter-relationships, information/communication systems and management of processes and products. Empirical data were taken from a survey of 418 Australian manufacturing organisations. Structural equation modeling technique was used for statistical analysis. The study concluded that there was insufficient statistical evidence to support that TQM is related to innovation.

A study conducted by Prajogo & Sohal (2004) entitled: The Relationship Between TQM Practices, Quality Performance, and Innovation Performance. The study aimed to examine the relationship between total quality management (TQM) and innovation performance and compares the nature of this relationship against quality performance. The empirical data were obtained from a survey of 194 managers in Australian industry encompassing both manufacturing and non-manufacturing sectors. The structural equation modeling technique was used to examine the relationships between TQM and quality performance as well as innovation performance, simultaneously. The findings suggested that TQM practices (leadership, strategic planning, customer focus, information and analysis, people management, and process management) significantly and positively related to both product quality and product innovation.

After reviewing these studies, the present study differs from previous studies in terms of:

None of them has investigated the impact of Soft TQM practices impact on product , most of them focused on technical practices of TQM and administrative innovation. Therefore, this study sought to bridge this gap by creating a reasonable model of the relationship between the two variables.

Since the information from the literature review findings is lacking, this study can add considerable information in this area that can be used for future researches about the issue.

Chapter Three: Study Methodology

Preview :

This chapter describes the study methodology which expresses the approach that used in the research to achieve the objectives of the study and to answer its questions. It includes research design, population of the study, study sample, data collection methods, research instruments (study tools), as well as validity and reliability of the tools.

Study Design :

Study design is the frame work that created by the researcher to find answers to the research questions. The frame work includes set of methods and procedures used in collecting and analyzing measures of variables specified in the research problem.

The analytical statistical approach was followed in conducting this study. This approach involves collecting data about the problem of the study and then conducting a statistical analysis in order to explain and describe it.

This study used the quantitative approach in collecting the required data by using a questionnaires designed to measure the study variables.

Study population :

The population of the study consists of the industrial companies operating in (AIE) from different industries. Due to the difficulty of covering the entire study population, the researcher chooses a proportional sample consisted of 20 different companies , these companies were chosen based on production size and number of employees (see Appendix D).

Study sample :

The target respondents to the questionnaires were high & middle – level management employees which include (managers, head of departments, supervisors and engineers), these target respondents were chosen to answer the questionnaires due to their scientific qualifications and experience in the field of quality, they have the ability to answer the questionnaire accurately and objectively, the survey includes departments of: human resources, production and operation, marketing, quality and research and development in each company. The researcher conducted a comprehensive survey of the study sample represented by the all managers in top and middle management levels in the industrial companies that were chosen from AIE .

Data collection Sources :

In this study the researcher relied on two sources to collect data: secondary and primary, to achieve the study objectives, they are as follows:

Secondary Data: it includes data collected from theoretical studies, literature , relevant journals available to the topic of the study, scientific researches and Information published on the internet.

Primary Data: Data collected from the questionnaire distributed to the target respondents which represent the sample of the study.

Data collection instrument (study tool) :

The main study instrument is a questionnaire. Most of the questionnaire statements were designed by referring to previous studies (Prajogo & Sohal 2004; Hoang et al 2006; Perdomo-Ortiz et al., 2006; Kim et al., 2012; Ooi et al., 2012; Bon & Mustafa, 2013; Toga, 2017), some statements was suggested by the researcher and then were modified based on the suggestions of some academicians and industrial experts specialized in the study field.

The questionnaire was designed to examine the impact of Soft TQM practices (independent variable) on Innovation (dependent variable), it consists of (44) statements to measure the study variables (see Appendix B), the researcher translated the questionnaire to Arabic language (see Appendix C) to avoid misunderstanding of statements in English language for some respondents of the study.

The designed questionnaire is divided into three sections:

Section One: This section consists of statements to collect the demographic variables (gender, age, education level, years of experience, job position, department, number of employees, company`s capital and product market).

Section Two: This section consists of statements to examine independent variable (Soft TQM practices).

Section Three: This section consists of statements to examine the dependent variable (Product Innovation).

The researcher used typically Likert Scale to examine how strongly the sample respondents agree or disagree with the statements in the questionnaires, the scale is shown in table (3.1) bellow:

Table (3.1): Likert scale

Strongly agree	5 degrees
Agree	4 degrees
Neutral	3degrees
Disagree	2 degrees
Strongly Disagree	1 degree

Table (3.1) presents the Likert scale consisting on five degrees of approval (1-5), respectively, where 5 means agree with a very high degree, 4 agree with a high degree, 3 somewhat agree, 2 somewhat disagree and 1 surely disagree.

Face Validity :

For the purpose to be insured from the level of accuracy of the instrument measures, the questionnaire was reviewing by (6) academic referees (see Appendix A) to evaluate validity of the study instrument content: the clarity of the questions, consistency of phrases and the questions fit for the scale. There comments and amendments were taken in consideration in drafting the final version of the questionnaire.

Reliability :

Reliability deals with the ability of the instrument to measure and give results that are reproducible in repeat experiments (Zhang, 2000) (Cronbach's alpha) of the internal consistency test is used to confirm the reliability of the study instrument.. This technique involves calculating a statistic known as Cronbach's coefficient alpha, whose value should be 0.7 or more, if results are to be considered as reliably good (Hoang et al., 2010).

The results of Cronbach's alpha test are shown in table (3.2) below:

Table (3.2): Cronbach's alpha coefficient test for study variables

Reliability coefficient (Cronbach's alpha) for study variables		
Field	Dimension	Reliability coefficient (Cronbach's alpha)
Soft Total Quality	Leadership	0.82
	Employee Training	0.88
	Employee Empowerment	0.79
	Teamwork	0.81
	Customer Focus	0.84
	Continuous Improvement	0.75
	Soft Total Quality as a whole	0.82
Product Innovation	0.78	

Table (3.2) shows that the values of Cronbach's alpha coefficient ranged between (0.75 – 0.88). All values is more than (0.7) which Indicating the reliability of the study instrument .

Statistical Tools :

The researcher used Statistical Package for Social Sciences (SPSS) to analyze the data that were collected by questionnaires. The following statistical tests were used in data analysis:

Normal distribution test.

Linear correlation test.

Consistency Reliability Test (Cronbach`s Alpha): to confirm the reliability of the measuring tool.

Means & Standard deviations: to identify the degree of approval of the respondents on the study variables and dimensions.

Multiple Regression Analysis: to test the validity of the study Hypotheses.

Chapter Four : Data Analysis

Preview :

This chapter shows the results and analysis of data collected through the questionnaire from study sample. SPSS (Statistical package for the social sciences) software was used to analyze the questionnaire`s data.

4.2 Demographic Characteristics of the Study Sample

This section shows the demographic characteristics of the study which include: gender, age, educational level, years of experience, job position, department, number of employees, company`s capital, product market and ISO certificate as shown in table (4.1):

Table (4.1): Distribution of the study`s respondents according to demographic variables

		Frequency	Percent
Gender	Male	184	92.0
	Female	16	8.0
	Total	200	100.0
Age	Less than 30 years	25	12.5
	30- less than 40 years	93	46.5
	40- less than 50 years	63	31.5
	50 years and above	19	9.5
	Total	200	100.0
Education level	Diploma	44	22.0
	Bachelor`s degree	152	76.0
	Postgraduate	4	2.0
	Total	200	100.0
Years of Experience	Less than 5 years	29	14.5
	5 – less than 10 years	67	33.5
	10- less than 15 years	52	26.0
	years and above	52	26.0
	Total	200	100.0

Job position	General Manager	16	8.0
	Head of department	32	16.0
	Unit manager	65	32.5
	Engineer	56	28.0
	Supervisor	31	15.5
	Total	200	100.0
Department	Human Resources	35	17.5
	Research and Development	21	10.5
	Production and operation	25	12.5
	Quality	82	41.0
	Marketing	37	18.5
	Total	200	100.0
The company's capital	100 thousand – less than 200 thousand JD	17	8.5
	200 thousand – less than 500 thousand JD	42	21.0
	500 thousand JD and above	141	70.5
	Total	200	100.0
Number of company's employees	Less than 100	68	34.0
	100 - less than 200	86	43.0
	200 – Less than 500	35	17.5
	500 and above	11	5.5
	Total	200	100.0
Product market	Local	87	43.5
	Regional	69	34.5
	International	44	22.0
	Total	200	100.0
Has your company received any ISO certificate	No	49	24.5
	Yes	151	75.5
	Total	200	100.0

Table (4.1) shows that:

There were (184) males in the study sample represents (92%), while there were (16) females represents (8.0%).The reason for this result can be explained because of the female physiological nature that sometimes does not help here to work in industrial companies.

The highest percentage for the distribution of the study sample depending on the variable of age was (46.5%) for the age group (30- less than 40 years), while the lowest percentage was (9.5%) for the age group (50 years and above).perhaps the reason for this result is the believe of some Jordanian industrial companies that this range of age for employees has the ability to take responsibility of the work.

The highest percentage for the distribution of the study sample depending on the variable of the educational level was (76.0%) for the educational level (Bachelor`s degree), while the lowest percentage was (2%) for the educational level (Postgraduate). This high ratio indicates that the Jordanian industrial companies depend on the educational level in the recruitment system to improve their performance.

The highest percentage of the distribution of the sample according to the variable of the number of years of experience was (33.5%) for each of the periods of experience (5 – less than 10 years), while the lowest percentage was (14.5%) for a period of experience (Less than 5 years).

The highest percentage for the distribution of the sample depending on the variable of the Job position was (32.5%) for the job position (Unit manager), while the lowest percentage was (8.0%) for the job position (General Manager).

The highest percentage for the distribution of the sample depending on the variable of the Department was (41.0%) for the Department (Quality), while the lowest percentage was (10.5%) for the Department (Research and Development). This result shows that the Jordanian Industrial companies depends in their manufacturing process on quality.

The highest percentage for the distribution of the sample depending on the variable of the company`s capital was (70.5%) for the company`s capital (500 thousand JD and above), while the lowest percentage was (8.5%) for the company`s capital (100 thousand – less than 200 thousand JD).

The highest percentage for the distribution of the sample depending on the variable of the Number of company`s employees was (43.0%) for the Number of company`s employees (100 - less than 200), while the lowest percentage was (5.5%) for the number of the employees of the company (500 and above).

The highest percentage for the distribution of the sample depending on the variable of the Product market was (43.5%) for the Product market (Local), while the lowest percentage was (22.0%) for the Product market (International).

The highest percentage for the distribution of the sample depending on the variable of the Has your company received any ISO certificate was (75.5%) for Answer (yes), while the lowest percentage was (24.5%) for Answer (No).This result shows that Jordanian Industrial companies produce their products within the international standards in order to get a competitive advantages over other companies

Descriptive statistics :

This section presents the results of the study which aimed to examine the impact of Soft TQM practices on product innovation in the industrial companies operating in AIE through answering the study's questions and testing its hypotheses.

To answer the questions of the study, the Means and Standard Deviations (S.D) are calculated shown in the next section. The following formula was used to assign mean levels (High, Moderate and Low):

Category Length = [Highest weight– Lowest weight] / No. of categories.... (4.1).

$$\text{Category Length} = (5-1)/3= 1.33$$

This indicates that:

The range of mean between 1- 2.33 reflects a low approval level.

The range of mean between 3.67-5 reflects a high approval level.

- Descriptive Analysis of Independent Variables (Soft TQM practices)

Means and standard deviation were calculated for each Soft TQM practices, as it is shown in the tables below.

Leadership :

Table (4.2): Means and standard deviation for Leadership.

No.	Items	Mean	S.D	Rank	Level
2	The company management seeks to build a good reputation among its customers through the quality of its products.	4.32	0.57	1	High
5	The company management provides adequate resources for improving its products and services.	4.10	0.58	2	High
1	The company adopts a clear strategic plan.	4.09	0.59	3	High
3	The company management encourages the culture of continuous learning to achieve better results.	3.89	0.65	4	High
6	The company management encourages employee involvement in quality management and improvement activities.	3.88	0.69	5	High
4	The company has an understandable mission from all employees.	3.66	0.73	6	Moderate
7	The company allows their employees to make decisions concerning their work.	3.53	0.89	7	Moderate
Leadership as a whole		3.92			High

Table (4.2) shows the means for the sample's approval for Leadership Items in the surveyed companies ranged between (3.53-4.32). The highest Item was No. (2): The company management seeks to build a good reputation among its customers through the quality of its products, while the lowest item was No. 7: The company allows their employees to make decisions concerning their work; the overall average for the Leadership as a whole was (3.92) by a high assessment degree. This indicates that the management of industrial companies set within its objectives to develop the quality of its products in order to attract customers and maintain the existing customers.

Employee Training :

Table (4.3): Means and standard deviation for Employee Training

No.	Items	Mean	S.D	Rank	Level
2	Training programs in the company aim to raise the quality level.	3.89	0.71	1	High
1	The Company trains their employees on modern techniques that help to develop their performance to improve the quality of its products.	3.78	0.77	2	High
4	The company offers training programs through which employees can receive rewards that enables them to be creative and initiative.	3.55	0.92	3	Moderate
3	Training process in the company includes all employees within all departments and functions.	3.51	0.95	4	Moderate
5	The company spends money on the training process to motivate their employees to innovate.	3.45	0.99	5	Moderate
Employee Training as a whole		3.63		Moderate	

Table (4.3) shows that the means for the sample's approval for Items the Employee Training in the surveyed companies within the range between (3.45-3.89) where the highest item was No. (2): Training programs in the company aim to raise the quality level, while the lowest was item No. 5: The company spends money on the training process to motivate their employees to innovate; the overall average for the Employee Training as a whole was (3.63) by a Moderate assessment level. This indicates that industrial companies are seeking to improve the quality of their products by providing appropriate training programs, which leads to improve their performance.

Employee Empowerment :

Table (4.4): Means and standard deviations for "Employee Empowerment".

No.	Items	Mean	S.D	Rank	Level
1	The company encourages employees to come up with innovative ideas.	3.86	0.79	1	High
3	The company follows a fair recruitment system based on qualified employees who have high skill in their field.	3.80	0.73	2	High
4	The company provides employees with good opportunities for self development.	3.69	0.85	3	High
5	The company encourages innovation and initiative.	3.69	0.84	3	High
2	Employees in the company are given the authority to make decisions regarding their work.	3.32	0.90	5	Moderate
Employee Empowerment as a whole		3.67			High

Table (4.4) shows that the means for the sample's approval for Items the Employee Empowerment in the surveyed companies ranged between (3.32-3.86), where the highest mean was item No. (1): The company encourages employees to come up with innovative ideas, while the lowest mean was item No. 2: Employees in the company are given the authority to make decisions regarding their work; the overall average for the Employee Empowerment as a whole was (3.68) by a high assessment level. This result shows that industrial firms promote innovation and decentralization.

Teamwork :

Table (4.5): Means and standard deviations for Teamwork

No.	Items	Mean	S.D	Rank	Level
3	Team members cooperate with each other which improve their performance.	4.14	0.59	1	High
1	The company's management encourages teamwork thus increasing productivity and efficiency at work.	4.08	0.54	2	High
6	The company explains the roles of team members.	4.07	0.65	3	High
4	All information and knowledge are shared between employees in all departments to facilitate the work in the company.	3.99	0.66	4	High

5	Work assignments are distributed fairly.	3.96	0.71	5	High
2	Team members are held accountable for the actions they make.	3.90	0.71	6	High
Teamwork as a whole		4.02		High	

Table (4.5) shows that the means for the sample's approval for Items the Teamwork in the surveyed companies within the range between (3.90-4.14), where the highest was item No. (3): Team members cooperate with each other which improve their performance, while the lowest was item No. 2: Team members are held accountable for the actions they make; the overall average for the Teamwork as a whole was (4.02) by a High assessment level. This result ensures that industrial companies encourage cooperation between their employees, also shows the flexibility of working between its employees.

Customer Focus :

Table (4.6): Means and standard deviations for Customer Focus.

No.	Items	Mean	S.D	Rank	Level
2	the company takes into account customer`s desires when designing the product.	4.29	0.56	1	High
4	The company is keen to know the reactions of customers and their satisfaction with their products.	4.27	0.63	2	High
3	The company constantly studies customer complaints and provides appropriate solutions.	4.23	0.61	3	High
1	The Company is keen to study the needs and desires of customers.	4.22	0.49	4	High
8	The company is keen to provide after-sales service in a way that distinguishes it from competitors.	4.15	0.72	5	High
7	The company develops products that suit market potential.	4.12	0.73	6	High
5	The company assesses the level of customer relations and is keen to improve them.	4.05	0.61	7	High
6	The company conducts periodic market research regularly to propose new ideas in product design.	3.85	0.81	8	High
Customer Focus as a whole		4.15		High	

Table (4.6) presents the means for the sample's approval for Items of Customer Focus in the surveyed companies within the range between (3.85-4.29), where the highest mean was item No. (2): the company takes into account customer's desires when designing the product, while the lowest was item No. 6: The company conducts periodic market research regularly to propose new ideas in product design; the overall average for the Customer Focus as a whole was (4.15) by a High assessment level. This indicates that industrial companies taking in account customer needs in producing its product in order to satisfy them.

Continuous Improvement :

Table (4.7): Means and standard deviations for Continuous Improvement.

No.	Items	Mean	S.D	Rank	Level
3	The Company is keen to develop its products continuously.	4.18	0.57	1	High
2	The company seeks to solve the problems of quality drastically and constantly.	4.07	0.60	2	High
1	The company seeks to improve the performance of individuals, processes and functions.	4.00	0.61	3	High
6	The company is interested in providing equipment and advanced technology to increase the level of products quality	3.99	0.72	4	High
4	The company compares its products and services with other companies operating in the same field.	3.89	0.78	5	High
5	Company has a special department for research and development for continuous improvement of its products	3.52	1.12	6	Moderate
Continuous Improvement as a whole		3.94		High	

Table (4.7) shows that the means for the sample's approval for Items the Continuous Improvement in the surveyed companies within the range between (3.52-4.18) the highest was item No. (3): The Company is keen to develop its products continuously, while the lowest was item No. 5: Company has a special department for research and development for continuous improvement of its products; the overall average for the Continuous Improvement as a whole was (3.94) by a High assessment level. This represents that most of the industrial companies are improving their techniques, employees and operations in order to develop its products.

The researcher summarizes the means and standard deviations of the independents variables of the study Soft TQM practices in table (4.8) below:

Table (4.8): Means and standard deviations soft Total Quality Practices

Rank	Number	Dimension	Means	Assessment Level
1	5	Customer Focus	4.15	High
2	4	Teamwork	4.02	High
3	6	Continuous Improvement	3.94	High
4	1	Leadership	3.92	High
5	3	Employee Empowerment	3.67	High
Soft Total Quality as a whole			3.92	High

Table (4.8) shows that mean value of independent variable Soft TQM practices is 3.92, which represents a high degree of agreement. Customer focus ranked first of mean (4.15), while employee training ranks the last of mean (3.63). These results indicate that the level of implementation of Soft TQM practices at the surveyed companies was in the required level from the point view of the sample members.

-Descriptive Analysis of Dependent Variable (product innovation) :

The following table (4.9) illustrates the means and standard deviations of items used to measure the dependent variable (product innovation).

Table (4.9): Means and standard deviations for Product Innovation

No.	Items	Mean	S.D	Rank	Level
3	Using high quality raw materials in the production process.	4.32	0.53	1	High
2	Insert the durability elements into the design and production of products.	4.12	0.47	2	High
7	All departments in the company coordinate with each other to improve the company products.	4.08	0.45	3	High
1	The company uses modern technologies in producing and developing products.	4.07	0.66	4	High
4	The company is developing a new designs in different sizes and shapes.	3.96	0.67	6	High
5	The company offers its new products as soon as possible compared with other companies.	3.65	0.86	7	Moderate
Product Innovation as a whole		4.02			High

Table (4.9) shows that the means for the sample's approval for Items of Product Innovation in the surveyed companies ranges between (3.65-4.32) where the highest was item No. (3), using high quality raw materials in the production process, while the lowest was item No. 5: The company offers its new products as soon as possible compared with other companies; the overall average for the Product Innovation as a whole was (4.02) with a high assessment level. This result indicates that industrial companies seek to use high-quality raw materials in order to provide high quality products in the markets in order to achieve competitive advantage among other competitors.

Normal Distribution Test :

The (Kolmogorov- Smirnov Z) Test was applied to confirm that the study data were free from statistical problems that might adversely affect the results of the hypothesis test, the sig. values should be more than 0.05 to indicate that variables are follow normal distribution, the sig. values are shown in Table (4.10).

Table (4.10): Normal distribution test of the study variables

Field	Dimension	Kolmogorov Smirnov	Sig.	
Soft Quality	Leadership	٠.٩٩٠	0.75	normal distribution
	Employee Training	١.٣٨٤	0.62	normal distribution
	Employee Empowerment	١.١٨٤	0.72	normal distribution
	Teamwork	١.٦٠٥	0.55	normal distribution
	Customer Focus	١.٣٩٤	0.48	normal distribution
	Continuous Improvement	١.٣١٤	0.49	normal distribution
Product Innovation		١.٣٢٥	0.35	normal distribution

Table (4.10) indicates that the sig. values of the study variables. study between 0.35-0.75 all values above 0.05, which are acceptable values. The distribution was natural.

Linear Correlation Test :

Linear correlation test was used in order to find the degree of correlation between the independent variables, based on the Variation Inflation Factor(VIF) test , and variation allowable (Tolerance) test for each variable of independent variables, knowing that it is necessary not to exceed the inflation variation factor value of (10), and the value of allowable variation (Tolerance) must be from(0.05), it is used to specifies the regression types (simple or multiple) that must be used in testing the study hypothesis, if the two values match the acceptable values multiple regression must be used, if the two values not match acceptable values the simple regression must be used, the results obtained from linear correlation test are listed in the table (4.11) as follows:

Table (4.11): Linear Correlation Test

Independents Variables	Tolerance	VIF
Leadership	0.60	1.67
Employee Training	0.49	2.05
Employee Empowerment	0.36	2.76
Teamwork	0.67	1.50
Customer Focus	0.74	1.36
Continuous Improvement	0.47	2.15

Table (4.11) shows the values inflation Factor of variation (VIF) for all the independent variables less than (10), ranging between (1.36-2.76), while the value of the variation allowable coefficient (Tolerance) for all the independent variables is greater than (0.05) ranges value between (0.36-0.74). Therefore, we can say that there is no high correlation between the independent variables; And this enhances the possibility to use all of them in the form using a multiple linear regression, which is used to find out which of the independent variables analyzed statistically significant an impact on the dependent variable, as well as to know the percentage of the effect, if any.

Testing the Study Hypotheses :

Tests of the hypotheses in the study model were designed, to be three measures, the significance of Correlation Coefficients (R), the Coefficient of Determination (R^2) and the Multiple Regression (Beta, β). Possible correlations range from +1 to -1. As a rule of thumb, R values of 0 to .2 are generally considered weak, .3 to .6 moderate, and .7 to 1 strong (George and Mallery ,2003)

The coefficient of determination (R^2) is useful because it gives the proportion of the variance of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model/graph. The Multiple Regression measured by Beta (β) which is a measure of how strongly each set of predictor variables (independent variables) influence the criterion variable (dependent variable). Using multiple regressions we can test theories (or models) about precisely which set of variables is influencing the dependent variable.

In general, the Correlation Coefficients (R) measure the relation between only two variables while the Multiple Regression, Beta, measure the relation between a set of variables with one variable. The Coefficient of Determination (R^2) shows the linearity between variables. In this research we examine R by using Pearson Correlation Coefficients calculated for pairs of variables to test the significance of correlation coefficients. Beta is measured by applying the multiple regression test.

To test Study hypothesis Regression tests was applied including (regression summary, Analysis Of Variance (ANOVA) test and coefficients values. the regression summary are presented below in table (4.12):

Table (4.12): The regression summary of the main hypothesis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.593 ^a	.352	.332	.34311

Table (4.12) shows that the value of the correlation coefficient (R) was (0.593), and the value of R-square (0.352), which means that, Soft TQM practices are capable of explaining (35.2%) of the change in innovation.

The ANOVA test was used for measuring the effect of the independent variables on the dependent variable, the result is shown in Table (4.13) as follows:

The coefficient values for the independent variables that obtained from multiple regression tests are listed in table (4.13):

Table (4.13): Multiple regression analysis

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.895	.290		6.529	.000
	Leadership	.183	.066	.207	2.766	.006
	Employee Training	.015	.048	.026	.314	.754
	Employee Empowerment	.133	.067	.192	1.994	.048
	Teamwork	.119	.064	.132	1.857	.065
	Customer Focus	.119	.063	.128	1.896	.060
	Continuous Improvement	.464	.070	.560	6.598	.000

a. Dependent Variable: Product Innovation

Table (4.13) shows that:

There is a significant impact of the leadership on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level; the values of (Beta, T) reaches (0.207, 2.766), Sig. (0.006), therefore the first hypothesis is accepted.

There is no significant impact of employee training on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level. Where the values of (Beta, T) reaches (0.026, 0.314), Sig. (0.754), therefore the second hypothesis is rejected.

There is a significant impact of employee empowerment on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level. Where the values of (Beta, T) reaches (0.192, 1.994), Sig. (0.048), therefore the third hypothesis is accepted.

There is no significant impact of teamwork on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level. Where the values of (Beta, T) reaches (0.132, 1.857), Sig.(0.065), therefore the fourth hypothesis is rejected.

There is no significant impact of customer focus on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level. Where the values of (Beta, T) reaches (0.128, 1.896), Sig.(0.060), therefore the fifth hypothesis is rejected.

There is a significant impact of continuous improvement on product innovation in the industrial companies operating in AIE at ($\alpha \leq 0.05$) level. Where the values of (Beta, T) reaches (0.560, 6.598), Sig.(0.00), therefore the sixth hypothesis is accepted.

Chapter Five: Results, Discussion & Conclusions

Preview :

This chapter represents the explanation of the results of the Data Analysis for the study, conclusion of the study, researcher recommendations and suggestions for future researches in the related field.

Discussion Results :

Firstly, the results that related to the respondent's approval toward Soft TQM practices showed that the means values ranged between (3.63-4.15),

where the assessment scale values of means are:

The range of mean between 1- 2.33 reflects a low approval.

The range of mean between 2.34 - 3.66 reflects a moderate approval.

The range of mean between 3.67-5 reflects a high approval.

Based on the previous scale the dimension of Customer Focus was in the first rank followed by Teamwork in the second rank, Continuous Improvement ranked in the third place, while Leadership ranked in the fourth place, Employee Empowerment in the fifth and Employee Training in the Sixth and last place; the general mean for the field as a whole was (3.92) represent a high level of assessment, which shows that the level of practicing the soft Total Quality practices on innovation in Industrial companies operating in AIE was in the required level from the point view of the sample members. These results represent the answer for study question: (What is the level of soft Total Quality management practices in the industrial companies operating in AIE?).

This study showed that customer focus practice ranked the highest mean value of (4.15), this reflects that the industrial companies working in AIE have awareness about the importance of focusing on the customers and meeting their requirements and needs. To ensure that customers are happy and satisfied, market surveys can be done by producing consumer prototypes to collect their opinions on demands and requirements. These will contribute in building a good reputation and achieving high profits and continuous growth for companies.

Teamwork is the second important practice in Soft TQM implementation with a mean value (4.02), which is a high degree, this indicates that the employees and managers in industrial companies in AIE recognize the importance of teamwork and its benefits in improving performance in all activities of industrial companies, it's Known that the industrial companies are, always, seeking to spread the spirit of cooperation between their employees, strengthen relations between them, which leads to share information, experience and skills among them in order to achieve the work efficiently and effectively.

Continuous Improvement is the third important practice in Soft TQM implementation with a mean value of (3.94) which considered a high degree; this shows that the industrial companies in AIE seek to develop their techniques and methods in order to achieve continuous improvement in all operations and activities in order to achieve their objectives, including: producing high quality products at lower costs, gaining competitive advantage and achieving high profits.

Leadership is the fourth rank in the assessment scale with a mean value (3.92), this indicates that the respondents have a positive approval toward leadership in the surveyed companies; Therefore, the study found that managers in the industrial companies in AIE have drawn a clear plan with short and long- objectives aiming to achieve. In addition to that they provide a necessary resource to improve the quality of the company products and services. The result also indicates that these companies involve all employees in the process of continuous improvement of quality activities in order to improve their performance level.

Respondents of the study have a positive attitude toward employee empowerment with a mean value (3.67). This can be explained by the fact that top management in industrial companies is aware of the importance of empowering their employees, and its impact on their performance, giving employees the freedom, flexibility, power to make decisions and solve problems, which make employees feeling energized, capable and motivated to participate in change, development and innovation.

Employee Training has a lowest mean value (3.63), which indicates that this practice is less important for the respondents than the previous Soft TQM practices, the reason for this result is the lack of awareness of industrial companies of the importance of training programs in developing quality activities and performance.

Based on the previous results, the study shows that the majority of respondents have positive perspective toward implementing Soft TQM practices in their companies, this gives an indication of the awareness of managers and employees that Soft TQM practices contribute to improve the performance of their company and products quality.

Secondly, the results that related to means of the respondents approval toward dependent variable (product innovation) showed positive attitude with mean value (4.02). This indicates that the industrial companies in AIE have a high level of product innovation. So, the study found that the industrial companies in AIE are using modern techniques and equipment in the production process, using raw materials of high quality as well as creating a new design for their products in different shapes and sizes. These results represent the answer for the study question (What is the level of product innovation in the industrial companies operating at AIE?)

Finally, the findings of the statistical analysis of the study hypotheses shows a positive and a negative impact of Soft TQM practices on product innovation in the industrial companies operating at AIE as follow:

Soft TQM practices (leadership and employee empowerment) have a significant impact on product innovation. These results are compatible with the results of previous related studies: (Al- shaar and Al- Najar, 2015; Toga & Urban, 2017; Zhang et al., 2016; Ismail et al., 2015; Al-shaar, 2014; Ardestani & Amirzadeh, 2012; Zehir et al., 2012; Al-Refaie et al., 2011; Lee et al., 2010; Projogo et al., 2006; Hoang et al., 2006; Projogo & Sohal, 2004). And inconsistent with studies (Abrunhosa & Sa, 2008; Projogo & Sohal, 2006; Singh & Smith, 2004). These results indicate that industrial companies operating at AIE realize that management commitment to improve quality will lead to product innovation by setting strategic plan; specific objectives and clear vision in their companies. Also, it indicate that these companies encourage and motivate their employees to innovate a new ideas and develop themselves by giving them some authority to make decisions related to their field.

Continuous improvement practice has a significant impact on product innovation. This result is consistent with studies (Al- shaar and Al- Najar, 2015; Zhang et al., 2016; Ardestani & Amirzadeh, 2012; Zehir et al., 2012).

This result indicates that industrial companies in AIE are continuously improving its production processes, functions and quality activities in order to innovate new products.

Soft TQM practices (employee training, teamwork and customer focus) have no significant impact on product innovation. This result is compatible with previous related studies: (Abrunhosa & Sa, 2008; Projogo & Sohal, 2006; Singh & Smith, 2004). They indicated in their studies that the creation of innovation through employee participation requires extensive and massive investment in the training and promotion of their technical knowledge, and this is impossible in most businesses. Prajogo & Sohal (2001) also support this result; they indicated that companies which are focusing on customer requirements and trying to satisfy them may lead these companies to ignore the search for innovation and new solutions. Abrunhosa & Sa (2008) indicated that TQM kills individual creativity as it encourages working in groups. And inconsistent with (Al- shaar and Al- Najar, 2015; Toga & Urban, 2017; Zhang et al., 2016; Ismail et al., 2015; Al- shaar, 2014; Ardestani & Amirzadeh, 2012; Zehir et al., 2012; Al-Refaie et al., 2011; Lee et al., 2010; Projogo et al., 2006; Hoang et al., 2006). These results indicates that industrial companies in AIE do not concentrate on, employee training, team work and customer focus.

Although the results showed that the level of adoption of soft TQM practices is high in the surveyed companies and the level of product innovation is also high in the surveyed companies, however, it is not necessarily that soft TQM practices are the reason for the high level of product innovation in the surveyed companies and this is what the results of this study showed

The reason behind the negative results may –according to the researcher - due to lack of awareness of surveyed companies for:

The importance of training the employees on modern techniques to improve their performance and provide them with new skills that contribute to the creation of new products compete in the markets.

Focusing on meeting the ever-changing needs and requirements of customers is a major challenge for most companies, which motivates their employees to think about solutions to create new products.

Another probably interpretation for these results is that some factors such as company size and financial resources, may affect the performance of companies in general and innovation in particular, as the size of the company increases, production processes increase and this may give a better indication of the product innovation. The availability of financial resources can also lead to the previous results, spending on training programs and the use of modern equipment which contributes to upgrading the level of product innovation.

The previous results represent the answer for the study question: (Is there any impact of soft TQM practices (leadership, employee training, employee empowerment, teamwork, customer focus, continuous improvement) on innovation in the industrial companies that operating at AIE?).

Recommendations

The main recommendations of this study are as follows::

The top management of the industrial companies in AIE should realize that quality and innovation are important factors to achieve survival, growth and create a sustainable competitive advantage. Therefore, TQM practices should be implemented to improve products and services.

Managers in the industrial companies have to promote better adoption of Soft TQM practices through participation and supervision or through financial support, in order to improve the level of innovation in their companies.

The managers of the industrial companies in AIE should pay attention to the development of training policies within the company plan to provide employees with adequate training, as investment in education and training requires a vision and a long-term strategy, which will improve the capabilities and skills of the employees and therefore, improving innovation levels.

The senior management of the industrial companies in AIE should provide the appropriate environment to encourage employees to suggest a new ideas, as that enhance the level of innovation.

The senior management in the industrial companies should encourage teamwork spirit among the employees of the company, as it helps to share knowledge and experience and it stimulates the creation of new ideas that raise the level of innovation and performance of the companies

Industrial companies should focus more on the needs and requirements of customers by conducting a research in the market centers on the needs and expectations of customers in order to make advantages of its results in designing a new products, thus improving the quality of products and improving manufacturing processes to retain the current customers and gain new customers.

Government support for the industrial sector through reducing tax of work permits of expatriate workers, reduction of electricity prices in order to survive within the present economic and the political circumstances surrounding of the region.

Suggestions :

In the light of this study results, the researcher would introduce suggestions for future studies such as:

To expand the research on Soft TQM practices which are not studied in this research to examine their effect on product innovation, such as suppliers relations , Quality culture and Human Resources management.

Collecting more comprehensive data to confirm the results of the study, by expanding the search data including more companies in various industrial sectors.

Conducting future research similar to the present study variables and dividing the dependent variable into sub-variables, Radical product innovation and Incremental product innovation.

Conducting future research similar to the present study with other variables such as Organizational Culture as a moderate and Organization Structure (organic or mechanic) as a mediator.

Conducting future research similar to the present study, taking into account other factors such as, uncertainty in business environment, firm size and financial resources.

Conducting studies similar to the current study due to the lack of studies on industrial companies to confirm the results of this study.

Summary

The aim of this study is to explore the extent to which Soft TQM practices were adopted and to demonstrate the extent of their impact on innovation i.e product innovation in the industrial companies in AIE. The results of the study showed that there is a positive trend of the targeted companies towards applying Soft TQM practices. Which indicates that these companies put quality as a priority into its operations and activities.

The results of the independent variables showed disparity in their impact on product innovation. The study found that the leadership has more significant impact on product innovation, which indicates that the surveyed companies have a plan, a clear vision and specific objectives to achieve through the adoption of TQM practices, this is also shown through the empowerment of its employees, by giving them powers to allow them to take decisions regarding their work, which leads to Create a suitable environment for the emergence of innovation. Continuous improvement also has a positive impact on product innovation. This indicates that the surveyed companies continuously develop and improve production processes, employees, technologies and quality of their products, to raise the level of performance and product innovation.

In contrast, other variables (teamwork, customer focus, employee training) has no significant impact on product innovation in the surveyed companies, which indicates that there is a lack of awareness in these companies to the importance of such practices in improving product innovation. Teamwork contributes to the sharing of ideas, knowledge and experience between all departments of companies, which leads to the innovating of a new ideas in the design and the production of products. Focusing on customer, also, did not give a positive indication of its impact on product innovation, which indicates that the surveyed companies pay less attention to customer needs and requirements. Handling researches and collecting information about customer's opinions and requirements will contribute to determine the needs of the markets and produce a new products, which achieve competitive advantage for the companies.

Employee training has not shown any impact on product innovation, which indicates that the companies surveyed have little interest in training. Training programs for employees provide them with new skills, knowledge and methods, that enable them to accomplish their work more efficiently and effectively, give better opportunities to come up with innovative ideas in the design and the production of products.

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List of Appendices

Appendix A
Academic Referees

Academic Referees	Academic Rank	University
Dr. Nader Abu sheikha	Professor	Zarqa University
Dr. Zakirya Al-Azzam	Professor	Zarqa University
Dr. Ahmad Ali Salih	Professor	Middle East University
Dr. Bahjet Al Jawazneh	Professor	Al al-Bayt University
Dr. Ziad Al Somadi	Associate Professor	Al al-Bayt University
Dr. Abdullah Al- Adamat	Assistant Professor	Al al-Bayt University

Appendix B

Questionnaire in English

Dear employee,

This study aims at examining the impact of soft Total Quality management practices on innovation in the industrial companies in Jordan.

Please fill out this questionnaire accurately and objectively to be adopted in the analysis as a reliable information and come up with valid results and recommendations. Please note that this study is being conducted as a requirement for obtaining a Master's Degree in Business Administration at Al- al-Bayt University.

All information provided will be treated confidentially, and all data will be used for research purposes only. Results of this research would be provided to you upon request.

Thank you for your cooperation and your patience. I highly appreciate your valuable efforts in supporting this scientific research.

Supervisor:

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Section One: Demographic Data

Please put (√) in the box that represents your answer on each of the following questions:

Gender:

Male

Female

Age:

Less than 30 years

30- less than 40 years

40- less than 50 years

50 years and above

Education level:

Diploma

Bachelor's degree

Postgraduate

Years of Experience:

Less than 5 years

5 – less than 10 years

10- less than 15 years

15 years and above

Job position :

General Manager

Head of department

Unit manager

Engineer

Supervisor

Department:

Human Resources

Research and Development

Production and operation

Quality

Marketing

The company's capital:

100 thousand – less than 200 thousand JD

200 thousand – less than 500 thousand JD

500 thousand JD and above

Number of company's employees:

Less than 100

100 - less than 200

200 – Less than 500

500 and above

Product market:

Local

Regional

International

Has your company received any ISO certificate:

No

if yes which one.....

Section Two: This section contains statements that measure Soft Total Quality practices on your company, please mark (√) only on an appropriate answer on the scale.

Leadership		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1-	The company adopts a clear strategic plan.					
2-	The company management seeks to build a good reputation among its customers through the quality of its products.					
3-	The company management encourages the culture of continuous learning to achieve better results.					
4-	The company has an understandable mission from all employees.					
5-	The company`s management provides adequate resources for improving its products and services.					
6-	The company`s management encourages employees involvement in quality management and improvement activities.					
7-	The company allows their employees to make decisions concerning their work.					

Employee Training		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
٨-	The Company trains their employees on modern techniques that help to develop their performance to improve the quality of its products.					
٩-	Training programs in the company aim to raise the quality level.					
١٠-	Training process in the company includes all employees within all departments and functions.					
11-	The company offers training programs through which employees can receive rewards that enables them to be creative and initiative.					
12-	The company spends money on the training process to motivate their employees to innovate.					

Employee Empowerment		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
13-	The company encourages employees to come up with innovative ideas.					
14-	Employees in the company are given the authority to make decisions regarding their work.					
15-	The company follows a fair recruitment system based on qualified employees who have high skill in their field.					
16-	The company provides employees with good opportunities for self development.					
17-	The company encourages innovation and initiative.					

Teamwork		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
18-	The company's management encourages teamwork thus increasing productivity and efficiency at work.					
19-	Team members are held accountable for the actions they make.					
20-	Team members cooperate with each other which improve their performance.					
21-	All information and knowledge are shared between employees in all departments to facilitate the work in the company.					
22-	Work assignments are distributed fairly.					
23-	The company explains the roles of team members.					

Customer Focus		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
24-	The Company is keen to study the needs and desires of customers.					
25-	the company takes into account customer`s desires when designing the product.					
26-	The company constantly studies customer complaints and provides appropriate solutions.					
27-	The company is keen to know the reactions of customers and their satisfaction with their products.					
28-	The company assesses the level of customer relations and is keen to improve them.					
29-	The company conducts periodic market research regularly to propose new ideas in product design.					
30-	The company develops products that suit market potential.					
31-	The company is keen to provide after-sales service in a way that distinguishes it from competitors.					

Continuous Improvement		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
32-	The company seeks to improve the performance of individuals, processes and functions.					
33-	The company seeks to solve the problems of quality drastically and constantly.					
34-	The Company is keen to develop its products continuously.					
35-	The company compares its products and services with other companies operating in the same field.					
36-	Company has a special department for research and development for continuous improvement of its products					
37-	The company is interested in providing equipment and advanced technology to increase the level of products quality					

Section Three: This section contains statements that measure Product Innovation on your company, please mark (√) only on an appropriate answer on the scale.

Product Innovation		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
38-	The company uses modern technologies in producing and developing products.					
39-	Insert the durability elements into the design and production of products.					
40-	Using high quality raw materials in the production process.					
41-	The company is developing new designs indifferent sizes and shapes.					
42-	The company offers its new products as soon as possible compared with other companies.					
43-	The company has sought to develop a number of new products to markets in recent near years.					
44-	All departments in the company coordinate with each other to improve company`s products.					

Thank You

Appendix (C)
Questionnaire in Arabic



كلية الاقتصاد والعلوم الإدارية

قسم إدارة الأعمال

عزيزي الموظف،

تقوم الباحثة بإعداد دراسة حول ممارسات إدارة الجودة الشاملة واثرها في الإبداع في الشركات الصناعية العاملة في الأردن، وذلك استكمالاً لمتطلبات الحصول على درجة الماجستير في إدارة الأعمال في جامعة آل البيت.

لذا نرجو التكرم بالإجابة على فقرات الاستبيان لما لها أثر على نتائج الدراسة، علماً بأن جميع البيانات التي سيتم الحصول عليها ستعامل بسرية تامة ولن تستخدم إلا لأغراض البحث العلمي.

شكراً لكم لحسن تعاونكم

الباحثة:

آلاء ارشيد الخوالدة

المشرف:

أ.د. سالم العون

القسم الأول : البيانات الديموغرافية:

أرجو التكرم بوضع (√) في الصندوق الذي يشير عن إجابتك عن هذه الأسئلة:

(١) الجنس:

ذكر أنثى

(٢) الفئة العمرية :

أقل من ٣٠ سنة ٣٠ - أقل من ٤٠ سنة

٤٠ - أقل من ٥٠ سنة ٥٠ سنة وأكثر

(٣) المستوى التعليمي:

دبلوم بكالوريوس دراسات عليا

(٤) عدد سنوات الخبرة في الشركة :

أقل من ٥ سنوات أقل من ١٠ سنوات

١٠ - أقل من ١٥ سنة سنة وأكثر

(٥) المسمى الوظيفي :

رئيس قسم مدير عام

مدير دائرة مهندس

مشرف

(٦) القسم التنظيمي:

موارد بشرية البحث والتطوير

تسويق إنتاج وعمليات

جودة

(٧) رأس مال الشركة:

١٠٠ ألف - أقل من ٢٠٠ ألف دينار أردني

٢٠٠ ألف - أقل من ٥٠٠ ألف دينار أردني

٥٠٠ ألف دينار اردني فأكثر

٨) عدد موظفي الشركة:

أقل من ١٠٠ موظف ١٠٠ - أقل من ٢٠٠ موظف

٢٠٠ - أقل من ٥٠٠ موظف ٥٠٠ موظف فأكثر

٩) سوق المنتج :

محلي إقليمي عالمي

١٠) ISO أهله حصل منتج شركتك على أي شهادة ايزو :

نعم

لا

نوع الشهادة.....

القسم الثاني : متغيرات الدراسة : يرجى وضع علامة (√) أمام الإجابة المناسبة

أولا : ممارسات إدارة الجودة الشاملة

القيادة	أوافق بشدة	أوافق	محايد	لا أوافق بشدة
١- تعتمد إدارة الشركة على خطة استراتيجية واضحة.				
٢- تسعى إدارة الشركة لبناء سمعة جيدة بين من خلال جودة منتجاتها . عملاتها				
٣- تشجع إدارة الشركة ثقافة التعلم المستمر لتحقيق نتائج أفضل.				
٤- تمتلك الشركة رسالة مفهومة من قبل جميع العاملين فيها.				
٥- توفر إدارة الشركة الموارد الكافية لتحسين جودة منتجاتها أو خدماتها.				
٦- تشجع إدارة الشركة مشاركة الموظفين في إدارة الجودة وتحسين الأنشطة.				
٧- تمكن الشركة موظفيها من اتخاذ القرارات المتعلقة بأعمالهم.				

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	تدريب العاملين
					٨- تقوم الشركة بتدريب موظفيها على التقنيات الحديثة التي تساعد على تطوير أدائهم بهدف تحسين جودة منتجاتها.
					٩- تهدف برامج التدريب في الشركة إلى رفع مستوى الجودة.
					١٠- تشمل عملية التدريب في الشركة جميع الموظفين في جميع الأقسام والوظائف.
					١١- تقدم الشركة برامج تدريبية يستطيع الموظفون من خلالها الحصول على مكافئات تمكنهم من الإبداع والمبادرة.
					١٢- تنفق الشركة مبالغ على عملية تدريب العاملين لتحفزهم على الإبداع

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	تمكين الموظفين
					١٣- تشجع الشركة موظفيها على طرح أفكار إبداعية.
					١٤- يتم منح الموظفين في الشركة سلطة اتخاذ القرارات فيما يتعلق بعملهم.
					١٥- تتبع الشركة نظام عادل للتعيين قائم على توظيف المؤهلين الذين يمتلكون مهارة عالية في مجال عملهم.
					١٦- توفر الشركة للموظفين فرصا جيدة للتطوير الذاتي.
					١٧- تشجع الشركة الموظفين على الابتكار والمبادرة.

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	العمل الجماعي
					١٨- تشجع إدارة الشركة العمل الجماعي مما يزيد من الإنتاجية والكفاءة في العمل .
					١٩- يتحمل أعضاء فريق العمل مسؤولية نتائج القرارات التي يتخذونها.
					٢٠- يتعاون أعضاء فريق العمل مع بعضهم البعض مما يحسن من أدائهم.
					٢١- تشارك جميع المعلومات والمعرفة بين الموظفين في جميع الأقسام لتسهيل العمل في الشركة.
					٢٢- توزع مهام العمل على أعضاء الفريق بشكل عادل.
					٢٣- توضح الشركة أدوار أعضاء فريق العمل.

لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	التركيز على العملاء
					٢٤- تحرص الشركة على دراسة احتياجات ورغبات العملاء.
					٢٥- تأخذ الشركة بعين الاعتبار رغبات العملاء عند تصميم المنتج.
					٢٦- تدرس الشركة شكاوى العملاء باستمرار وتوفر الحلول المناسبة.
					٢٧- تحرص الشركة على معرفة ردود فعل العملاء و مدى رضاهم عن منتجاتها.
					٢٨- تقييم الشركة مستوى العلاقات مع العملاء وتحرص على تحسينها.
					٢٩- تقوم الشركة بإجراء أبحاث دورية وبشكل منتظم عن الأسواق لاقتراح أفكار جديدة في تصميم المنتج.
					٣٠- تطور الشركة منتجات تتناسب مع إمكانية السوق.
					٣١- تحرص الشركة على تقديم خدمات ما بعد البيع بشكل يميزها عن المنافسين.

التحسين المستمر	أوافق بشدة	أوافق	محايد	لا أوافق بشدة	لا أوافق بشدة
٣٢- تسعى الشركة إلى تحسين مستوى أداء الأفراد والعمليات والوظائف					
٣٣- تسعى الشركة إلى حل مشاكل الجودة بشكل جذري دائماً.					
٣٤- تحرص الشركة على تطوير منتجاتها بشكل مستمر.					
٣٥- تقارن الشركة منتجاتها وخدماتها مع غيرها من منتجات الشركات الأخرى التي تعمل في نفس المجال.					
٣٦- لدى الشركة قسم خاص للبحث والتطوير من أجل التحسين المستمر لمنتجاتها.					
٣٧- تهتم الشركة بتوفير الآلات والمعدات والتكنولوجيا المتقدمة لزيادة مستوى جودة المنتجات.					

ثانياً: الإبداع (إبداع المنتج)

إبداع المنتج	أوافق بشدة	أوافق	محايد	لا أوافق بشدة	لا أوافق بشدة
٣٨- تستخدم الشركة التقنيات الحديثة في إنتاج وتطوير المنتجات.					
٣٩- إدخال عناصر المتانة في تصميم وإنتاج المنتجات.					
٤٠- استخدام مواد أولية ذات جودة عالية في عملية الإنتاج					
٤١- تقوم الشركة باستحداث تصاميم جديدة بأحجام مختلفة					
٤٢- تقوم الشركة بتقديم منتجاتها الجديدة بأقصر وقت ممكن مقارنة مع الشركات الأخرى					
٤٣- سعت الشركة إلى تطوير عدداً من المنتجات الجديدة إلى السوق في السنوات القريبة الماضية.					
٤٤- يتم التنسيق بين مختلف الأقسام المعنية في الشركة لتحسين منتجاتها.					

شكراً لكم لتعاونكم

Appendix (D)

The Surveyed Jordanian Industrial Companies in AIE

No.	Name of Company	Industry Type
1.	Al Fayhaa Company	plastic
2.	United Company for Pipe Manufacturing	Iron
3.	Al Zayna Metal Forming Company	Metal
4.	Arab Weavers Company	Waves
5.	Philadelphia Pharmaceutical Industries Company	medicines
6.	The Winner company	plastic
7.	Sawa company	plastic
8.	Al-Hadaf company	Aluminum
9.	Fine Company	tissues
10.	United company for Screw Manufacturing	Iron, Aluminum
11.	Nisan company	Plastic
12.	Al- Furat company	Plastic
13.	Modern vision Company	Electronic
14.	United Gulf company	plastic
15.	Abu- Hamdan company	plastic
16.	Al- Jawhra company	metal
17.	Al- Masar company	
18.	United company for dripping equipments	plastic
19.	Al- Masudia company	electronic
20.	Besan Company	Iron Aluminum

Appendix E

King Abdullah II Bin Al Hussein Industrial Estate (AIE)

King Abdullah II Bin Al Hussein Industrial Estate was established in 1984 in the city of Sahab (city), the total area is about 2,530 thousand square meters, equal to the industrial infrastructure in the area which provides many large, small and medium industries. It is the oldest among its counterparts in Jordan.

The city has an integrated infrastructure and superstructure that complies with the highest international standards of industrial cities, making it a model in design, encompassing a wide range of investments. As well as on the highway linking Jordan with Iraq and Saudi Arabia, and near the Queen Alia International Airport.

The industrial land and buildings of the Industrial City are available for purchase or lease at affordable prices. Companies operating exempt from income tax and social services tax for two years from the start of work. Also, Operating projects are exempted from land and building taxes at various stages of the project.

The city have 358 factories, with a total investment of nearly one billion Jordanian dinars, which is considered one of the most important branches of the Jordanian economy, and supports the labor market by providing about fifteen thousand jobs.

For more than a quarter of a century, this industrial city has become a cornerstone of the Jordanian investment environment capable of serving industrial investment in all its forms and providing its causes and success.

The value of the city's exports to Arab and international markets is more than half a billion Jordanian dinars annually, and its products include many raw materials and raw materials produced in the Kingdom.

https://ar.wikipedia.org/wiki/مدينة_سحاب_الصناعية