

**An-Najah National University**

**Faculty of Graduate Studies**

**Impact of Total Quality Management on  
Corporate Sustainability Through the Mediating  
Role of Corporate Social Responsibility in the  
Manufacturing Sector**

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Graduate Studies, An-Najah National University, Nablus - Palestine.**

**2021**

**Impact of Total Quality Management on Corporate Sustainability Through the Mediating Role of Corporate Social Responsibility in the Manufacturing Sector**

**By**

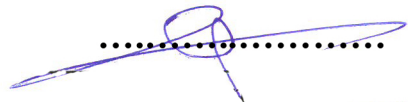
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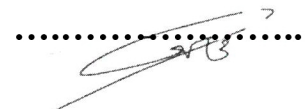
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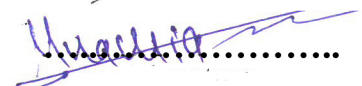
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### III

## **Dedication**

To my father the teacher "Mohammed Fathi" Hassis who taught me to never stop learning and be always ambitious... may his soul rest in peace.

To my beloved mother, Rihab Hassis, the one who loved me unconditionally and supported me throughout every step of the way

Thank you for everything.

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Finally, thanks to all study participants who provided me with valuable information and enrich this research with their experience.

أنا الموقعة أدناه، مقدمة الرسالة التي تحمل العنوان:

**Impact of Total Quality Management on Corporate Sustainability Through the Mediating Role of Corporate Social Responsibility in the Manufacturing Sector**

أقر بأن ما اشتملت عليه هذه الرسالة إنما هو نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة كاملة أو أي جزء منها، لم يُقدم من قبل للحصول على أي لقب أو بحث لدى أي مؤسسة بحثية أخرى.

**Declaration**

The work provided in this thesis unless otherwise referenced is the researcher own work and has not been submitted elsewhere for any other degree or qualification.

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## List of Abbreviations

Abbreviations	Meaning
TQM	Total Quality Management
CS	Corporate Sustainability
CSR	Corporate Social Responsibility
MBNQA	Malcolm Baldrige National Quality Award
PLS-SEM	Partial Least Squares Structural Equation Modelling
TBL	Triple Bottom Line
GP	Green Performance
EM	Environmental Management
SD	Sustainable Development
WCED	World Commission on Environment and Development
RBV	Resource- Based View
OECD	Organization for Economic Co-operation and Development
ISO	International Organization for Standardization
HACCP	Hazzard Analysis and Critical Control Points
GMP	Good Manufacturing Practices
KPI	Key Performance Indicator
LD	Leadership
SP	Strategic Planning
CF	Customer Focus
PM	Process Management
HRM	Human Resource Management
IA	Information and Analysis
ENS	Environmental Sustainability
SS	Social Sustainability
ECS	Economic Sustainability
CMT	Community
CUS	Customer
EMP	Employees

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CR	Composite Reliability
AVE	Average Variance Extracted
HTMT	Heterotrait–Monotrait Ratio of Correlations
VIF	Variance Inflation Factor
VAF	Variance Accounted For
IMS	Integrated Management System
PDCA	Plane-Do-Check-Act

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**Abstract**

In recent years, manufacturing firms started facing growing awareness about sustainability development from different stakeholders. The current study aims to investigate the impact of total quality management (TQM) on corporate sustainability (CS) through mediating role of corporate social responsibility (CSR). Six TQM practices were adopted from the Malcolm Baldrige National Quality Award (MBNQA) model, CS was composed of environmental, social and economic aspects, and CSR was measured through community, customers and employees' dimensions. A mixed research approach was adopted by conducting 12 semi-structured interviews with quality managers, production managers, and chief executive officers in the manufacturing sector in the West Bank-Palestine. A survey was used as a quantitative tool for data collection from 67 respondents at different managerial levels. Partial least squares structural equation modelling (PLS-SEM) was used for analysis. The findings indicated high levels of implementation of TQM practices and CSR activities. Moreover, CS was implemented at high level. Prioritization of TQM practices was established, where the most influential practices were 'customer focus' and 'human resource management', followed by 'strategic planning', 'process management'; the least influential practices were 'leadership' and 'information analysis'. structural analysis revealed that TQM had a significant and positive impact on CS. The results also

indicated a significant and positive influence of TQM on CSR. Furthermore, a similar impact of CSR is found on CS. Finally, CSR partially mediates the relationship between TQM and CS. A framework was developed to provide policy makers with a set of guidelines on how to integrate TQM practices and CSR activities in their strategy and operational process to achieve sustainable development objectives.

# **Chapter One**

## **Introduction**

This chapter provides a general overview of this research. It includes a general background, research problem, research questions, aims and objectives of the research, significance of research and finally thesis structure.

### **1.1 General background**

In this current climate, the world has started encountering new challenges and threats. Such challenges and threats have been impacting the way businesses operate; not only business, but also individuals, and switched the way we think and perform. The future remains uncertain, so business should expect the unexpected events. Even that, no one has expected complex situation like we have now, Covid-19 pandemic outbreak is a reminder that pandemics, like rarely occurring catastrophic, have happened in the past and still will be happening in the future. The pandemic has severe consequences not only on economy, but also on the society, which has led to dramatic global change on how businesses operate and customer behave (Donthu and Gustafsson, 2020). At the same time, the current pandemic reminds us that even the economy is matter, but it is not more important than human being health, and the importance of working together to save the planet as we know for the next generation, and to continue survival on it. In this dynamic global business environment, businesses, particularly manufacturing industries are required to be more resilient and adapt to changes, which will thrive in the long-term. Those firms that adapt best practices have the great potential to survive in the market (Bernal-conesa et al., 2016). A key factor for their success is sustainability. In fact, we all depend on one planet, each country strives for survival without

regard for their impact on others, the consumption of resources is grown rapidly meanwhile there is scarcity of resources. This issue was presented in *Our Common Future* or (the Brundtland Commission Report) in 1987 by The World Commission on Environment and Development (WCED). WCED (1987, p.43) defined the sustainable development (SD) as “meeting the needs of the present without compromising the ability of future generations to meet their needs”. Since then, the concept of SD has emerged as an important topic for manufacturing and product development process and is becoming a subject of interest in many studies such as Bansal (2004), Garvare and Johansson (2010), Isaksson (2006) and Bastas and Liyanage (2019), among many others. In terms of business, particularly manufacturing industries, are considered as one of the main column in the strength economy in any nation (Goyal et al., 2019). However, they are causing severe damage to natural environment in the form of water, air pollution, large amounts of waste and highly consumption rate of natural resources to produce products and increase their profits (Shahzad et al., 2019). A report was published in 2018 has revealed that “Just 100 companies are responsible for more than 70% of global greenhouse gas emissions over the last three decades” (Chapman, 2018). These companies are producing enough emissions to have a critical impact on climate change and global warming. In order to counter their negative impacts, new strategies and approaches should be adopted by all members in the society to follow environmentally-friendly policies and green practices. Sustainable manufacturing implies that companies generate long-term profit, while improving environment and society (Abbas, 2019). Being more sustainable will benefit the organization in many ways. More specifically, it will help become more efficient, enhance firm's reputation, retain employees and achieve long-term growth (Wilson, 2019). The

corporate sustainability (CS) depends mainly on three dimensions: economic, environmental and social, which commonly known as Triple Bottom Line (TBL) (Elkington, 1998). In order to make the balance among all pillars, they must correlate with each other to achieve this harmony. Adequate understanding on how social and economic action affects the environment, so there must be more knowledge and awareness of issues related to SD. Making the balance between the three pillars is challenging, due to complexity inherent in integration of economic, environmental and social dimensions (Bastas and Liyanage, 2019a). One factor that helps an organization facilitate integration of TBL sustainability is total quality management (TQM). The traditional definition of quality focused only on product specifications (Miller, 1996), while the modern definition expands beyond products features to integrate all system functions and stakeholders requirements. To meet stakeholder requirements, companies use management systems such as TQM, environment and social responsibility. TQM is a management philosophy that aims to meet customer expectation through tools, techniques, values and performance improvement at all system levels (Mahmood et al ., 2014; Fernandes et al., 2017). TQM plays central role in enhancing company capability to achieve sustainable development. It helps an organization to attain competitive advantages (Zwain et al., 2017). Also, it provides products with superior quality at the lowest cost, minimizes waste through efficient resource utilization. Moreover, it increases the ability to innovate new or improve the performance of exciting products (Qasrawi et al., 2017; Shafiq et al., 2017). Most research has been based on the resource- based view (RBV) theory, (Longoni et al., 2016). The RBV theory of the organization spot the light on the firm's resources and competences as a driver towards sustainable development. According to RBV theory, the firm can be viewed as a

collection of humans, physical and organizational resources. These resources are rare, valuable, inimitable, non-substitutable and main source of sustainable competitive advantage (Barney, 1991). Many researchers such as Bansal (2004) and Castka and Prajogo (2013) have adopted RBV in quality management and sustainability studies. However, the RBV has been criticized, since it's considered as statistic perspective rather than dynamic (Wu et al., 2017). Su and Linderman (2016) confirms that in order to gain high level quality performance, the company should adopt dynamic view to adaptation to change. In contrast, RBV focuses on heterogenous internal resources and ignore the dynamicity of the external environment.

Another factor that would help organizations achieve sustainable performance is CSR (Shahzad et al., 2019). Recently, the concept of CSR has been adopted by many organizations, it refers to a voluntary activities of a firm to embedded social and environmental issues within the company operations (Gazzola and Pellicelli, 2009). Many studies have mentioned that CSR practices have a significant contribution to firm performance and achieve sustainable growth (Mehralian et al., 2016; Martinez-Conesa et al., 2017; Malik and Kanwal, 2018; Ali et al., 2019). There are several benefits for implementing CSR, which include quick response to stakeholders requirements, enhancing firm's performance, which in turn reflects on reputation, as a result, increasing customers satisfaction and loyalty (Basu and Palazzo, 2008; Doh and Guay, 2006). According to this importance, CSR should be embedded in organizational culture and day to day operations. When TQM and CSR are implemented together, they have the potential to make sustainable competitive advantages in this dynamic environment (Wang et al., 2012).

There are limited researches that study the relationships between TQM, CSR and CS, particularly in challenging environment of a developing

country such as Palestine. Moreover, most of previous studies have focused on environmental dimension, while economic and social pillars were neglected which they are important factors to attain real sustainability. Therefore, the current study aimed to fill the gap and investigate empirically the relation between TQM and CS with the mediating effect of CSR.

## **1.2 Problem statement**

In this dynamic global business environment and highly competitive market, business, especially manufacturing sectors, are required to be more resilient to chance and thrive in the long-term (Bernal-conesa et al., 2016). During the last two decades, the business started facing increasing demand on high quality products (Abbas, 2020). This applies an extreme pressure on firms to increase productivity and maintain high quality levels. At the same time, increased production activities will harm natural environment (Rajeev et al ., 2017). Manufacturing industry is one of the main milestones in the strength of economy in any nation. However, they are responsible for large amounts of waste, pollution, consuming more energy and natural resources more than ever before (Shahzad et al., 2019). Taking into consideration scarce resources, climate change, human health, increasing customer awareness, stakeholders pressure, social accountability, global regulations for environment protection and infection control (Li et al., 2018). This situation puts the production organizations under many challenges; for example, how to achieve long-term sustainability and sustain competitive advantage without harming the naturel environment and society, and also to maintain volume of the production (Goyal et al., 2019). To be able to face these challenges, new approaches and changes are required to be adopted by all members of the society and organizations to follow environmentally-friendly practices and new strategies, and become

more socially responsible (Morioka and Carvalho, 2016). Moreover, it is preferred to integrate multiple strategies at the same time and support the main strategy with subsequent strategy, so they can achieve sustainable development goals effectively and efficacy (Abbas, 2019). Occupied Palestinian territories (OPT) have a special situation regarding environmental issues, due to the political situation and conflict in the country. This complex situation is reflected in a vague level of willingness to adopt and implement green practices in manufacturing sector (Masri and Jaaron, 2017). There are few studies that examine the relation between TQM, CSR and corporate sustainability especially in challenging environment of a developing country such as Palestine. This research will provide valuable insight to manufacturing firms in Palestine to achieve sustainable development through integrating TQM and CSR.

### **1.3 Research questions**

This study aims to answer the following questions:

RQ1: What are the best TQM practices that affect CS?

RQ2: What is the impact of TQM practices on CS?

RQ3: How does CSR mediate the relationship between TQM and CS?

### **1.4 Research objectives**

The main objectives of this research are as follows:

1. Identifying the best of TQM practices that affect CS in manufacturing sector in West Bank.
2. Developing a conceptual model that shows the relationship between TQM and CS through mediating role of CSR.

### **1.5 Significance of research**

The concern of sustainability has increased in the last two decades, due to rapid growth of operational industries, and considering the environmental deterioration mainly caused by manufacturing industries and inadequate studies identifying the factors that help firms to counter this issue. This study provides some contributions to the related literature. Firstly, there are a limited number of studies that focused on impact of TQM on CS. Siva et al. (2016) published a research that examines the relation between TQM and CS (TBL), but the researchers were not able to find empirically how TQM impacts CS. Secondly, the literature failed to give adequate evidence on the effect of CSR as a mediator on CS (Abbas, 2019; Shahzad et al., 2019). This study bridges this gap by investigating empirically the relation between TQM, CS and CSR. So, this study is the first of its kind in Palestine to be conducted in manufacturing sector. CSR was considered as a mediator for the effectiveness role that it plays in improving organizational performance, increasing customer satisfaction and enhancing firms' reputation (Shahzad et al., 2019).

### **1.6 Thesis Structure**

The thesis includes seven chapters. The first chapter “Introduction” introduces the thesis subject through a brief background overview. It also encompasses the research problem and the importance to support this research. Also, it clarifies aims and objectives of the research and research questions. The second chapter “Literature Review” introduces a literature review and summarizes studies that addressed the TQM practices, CS, CSR and previous studies which support the hypotheses formulation. In addition, a broader view was taken to look into how TQM may help in achieving sustainable development objectives. The third chapter “Methodology” presents the methodology that has been followed in this research through

discussing data collection process used, the population targeted, sampling process, the instrument development for data collection and the data analysis approach. The fourth chapter “Data Analysis and Results” presents the results and findings which illustrate the analytical results of quantitative and qualitative data and present the hypotheses testing results. The fifth chapter "Framework development" presents the proposed TQM framework, which provides many implications for managers to drive sustainable developmen in manufacturing firms. In sixth chapter “Discussion and conclusion" discusses the results illustrated in chapter four and gives brief conclusions on hypotheses' results. Finally, the seventh chapter “Managerial implications and future studies” provides practical and theoretical contribution of research. It also presents the limitation that faces the research with a set of recommendations and future research suggestions.

## **Chapter Two**

### **Literature review**

This chapter will present a revision and analysis of empirical and theoretical data found in the literature to demonstrate the importance of TQM practices and CSR have on the CS, and the relationship between them. Then a brief description of TQM practices and CSR activities that can be implemented by companies to boost TBL sustainability performance were made. Finally, research hypotheses will be developed in this chapter based on the literature.

#### **2.1 Total quality management (TQM)**

In order to occupy sustainable position in the dynamic global business environment, many enterprises are adopting effective and efficient business strategy. Organizations seek to attain customer satisfaction by delivering high quality products at competitive prices (Ketokivi and Choi, 2014). TQM philosophy can help organizations to achieve this goal. TQM focuses on continuous improvement which leads to improve overall organizational productivity (Aladwan and Forrester, 2016; Shafiq et al., 2017). Moreover, TQM enables companies to integrate all their functions at all levels, which enhances productivity and financial performance (Singh et al., 2018). Many studies such as Sila (2007), Bou-llusar et al.(2009), Singh et al. (2018), Sadikoglu and Olcay (2014) emphasized that implementing TQM practices enhance organizational performance. In the last few decade, thousands of studies have been conducted on TQM, but still there is no universal definition for it (Shafiq et al., 2017). Juran and Gryna (1993, P.12) defined Total Quality Management as " a set of management

processes and systems that create delighted customers through empowered employees, leading to higher revenue and lower cost ".

TQM is a management system approach that integrates organizational functions and processes at all levels in order to ensure customer satisfaction by focusing on continuous improvement (Ross,1999; Bou-llusar et al., 2009; Abbas, 2020). Deming (1982) stated that higher quality will gain competitive advantage by reducing cost and increasing productivity. Quality is free, this approach was first introduced by Crosby (1979) where he pointed out that what cost money are poor quality products which require rework, scrap and warranty cost. He confirmed that quality programs can save a company money by reducing prevention, appraisal and failure costs. Several empirical studies have found that effective TQM system has a positive influence on firm performance (Samson and Terziovski, 1999; Sila and Ebrahimpour, 2005; Pereira-moliner et al., 2012). In this regard, RBV provides thermotical foundation to demonstrate the relation between TQM and organizational performance (Li, 2018). TQM system provides an approach that can improve performance through exploit organization human and physical resources effectively (Hendricks and Singhal, 1997). Even in dynamic competitive environment that we living today, it is still effective in improving firm's performance (Zhang and Xia, 2013). Malcolm Baldrige National Quality Award (MBNQA) is a quality award established in the United States of America in 1987 (Ross, 1999). Baldrige award consists of seven criteria are used as a framework for implementing TQM and improve organizations performance as shown in Figure 1 (Badri et al., 2006; Sohn et al., 2007). Moreover, several researchers have concluded that MBQNA model can be used as a valid framework for TQM ( Curkovic et al., 2000; Lee et al. 2003; Bou-llusar et al., 2009), It fits the core concepts of TQM. In our research we used the six

criteria as TQM model elements namely leadership, process management, strategic planning, customer and market focus, information and analysis and human resource management (HRM). For the seventh criteria, the business result, it represents the financial and non-financial performance for the company.

- Leadership is considered as the driver for all factors in the MBNQA model (Badri et al., 2006). Which examines how top management is involved in communication and planning organization goals (Samson and Terziovski, 1999; Sila, 2007; Bou-llusar et al., 2009). Management leadership develops to achieve company strategic direction, maintain high quality, customer focus and continuous improvement (Aquilani et al., 2016; Singh et al., 2018). Also, management allocates adequate resources for quality improvement, motivates and reinforces employees to contribute and be creative (Dubey et al., 2015; Sila, 2007). Furthermore, top management evaluates how the organization addresses its social responsibility and commitment to community (Curkovic et al., 2000; Badri et al., 2006). A recent study by Ahmed et al. (2020) found that leadership has a significant impact on organizational performance. The results are compatible with previous studies of Lam et al. (2012) and Santos-Vijande and Alvarez-Gonzalez (2007), in the same direction. Shafiq et al. (2017) confirmed that leadership has a positive relationship with firms performance on both financial and non-financial dimensions. Badri et al. (2006) also concluded that leadership plays a key driver for all TQM factors in Baldrige model. Meanwhile, Adem and Viridi (2020) found that leadership has insignificant impact on firm's performance in manufacturing company. A study by Sadikoglu and Olcay (2014) also stated that there is insignificant relationship between leadership and all organization's performance criteria.

- Strategic planning: this element is considered one of critical success factors for achieving satisfied quality and increased performance (Curkovic et al., 2000; Wilson and Collier, 2000; Qasrawi et al., 2017). It focuses on how an organization sets their quality policy, short and long term goals, vision and mission, and how it develops, executes and refines its action plans to achieve quality objectives and achieve better performance (Aquilani et al., 2016; Singh et al., 2018; Abbas, 2020). The studies of Prajogo and Sohal (2004), Badri et al. (2006), Lam et al. (2012) and Talapatra et al. (2019) found that strategic planning have significant impact on organizational performance. On the other hand, Jong et al. (2019) in their studies demonstrated that strategic planning has no significant effect on firm's performance.
- Customer and market focuses dimension is regarded the core factor in TQM for better business results (Sila, 2007; Qasrawi et al., 2017; Omar et al., 2018). It examines how the company determines customers and market needs and requirements (Samson and Terziovski, 1999; Prajogo and Sohal, 2004, Curkovic et al., 2000; Aquilani et al., 2016). Customers satisfaction feedbacks are recorded and customer's complaints are properly resolved (Sila, 2007; Sadikoglu and Olcay, 2014; Singh et al., 2018). In addition, it identifies how the company enhances the relationship with the customers and makes sure they are satisfied (Sohn et al., 2007; Abbas, 2020). Psomas et al. (2014) emphasized that customer focus is the key TQM factor and has positive impact on span's services sector. Singh et al. (2018) also revealed that customer focus has a significant effect on organizational performance in Indian manufacturing and service industry. However, some previous studies have showed contrasting results. Specifically, Adem and Viridi (2020)

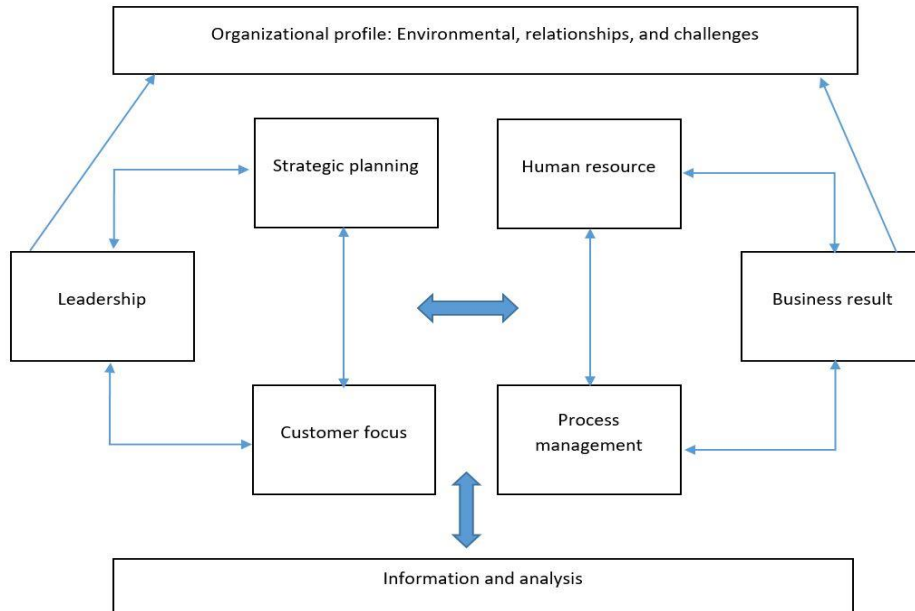
found that customer focus has no significant impact on organizational performance .

- Process management is a systematic approach that uses all organizational resources more effectively and efficiently in order to achieve required performance (Sit et al., 2009). It refers to integrate all system functions from product design through production to delivery. It also concerns with supplier performance evaluation and continuous improvement to increase system effectiveness and efficiency (Samson and Terziovski, 1999; Curkovic et al., 2000; Sila, 2007). Furthermore, it focuses on preventive and proactive activities such as; designing fool-proof, regular control of manufacturing process, automation and stable production schedule to reduce variation and improve products quality (Bouranta et al., 2017; Isaksson (2006) emphasized that process management is one of the most important factors in TQM for improving economic, environmental and social performance. In many empirical studies, Prajogo and Sohal (2004), Zeng et al. (2015), and Adem and Viridi (2020) have investigated the relationship between process management and quality performance which have showed a positive correlation between them. However, there are some studies that showed contradictory findings. Talapatra et al. (2019) found that process management has no significant effect on TQM implementation.
- Human resource management is one of the main dynamic assets of organization and a critical factor of TQM construct (Samson and Terziovski, 1999; Prajogo and Sohal, 2004; Aquilani et al., 2016; Talapatra et al., 2019). In order to keep high level of quality, organizations should promote and release the full potential of employees (Lee and Ooi, 2014). These capacities can be enhanced through applying various organizational development practices including, recruitment

procedure, employees training, involvement, empowerment, recognition and performance appraisal, health and safety environment (Sila, 2007; Singh et al., 2018; Yusr et al., 2017; Abbas, 2020). In addition, building encouragement work climate, equal opportunity, and effective reward mechanism, which in turn increase employees morale and satisfaction, as a result organizations' productivity and performance will be improved (Valmohammadi and Roshanzamir, 2015). Talapatra et al. (2019) confirmed in their study that human resource practices significantly impact TQM implementation. This result is consistent with earlier studies, namely, Psomas et al. (2014), Valmohammadi and Roshanzamir (2015), Singh et al. (2018), which have illustrated human resource practices are positively related with organizational performance. On the other hand, a study by Shafiq et al. (2017) concluded that human resource has no significant impact on financial and non-financial results.

- Information and analysis dimension addresses knowledge management related to TQM and how the data and information are used and analyzed to optimize organizational performance (Hurmelinna et al., 2002). Lee and Ooi (2015) confirmed that quality decision making is based on analyzing real and relevant data. An organization is responsible for providing reliable, sufficient, accurate and timely data and information for all users (Ooi, 2014). Many of quality measurement tools are used for processing information such as cause and effect diagram and Pareto charts, which aim to improve organizational performance (Samson and Terziovski, 1999; Zeng et al. (2015) revealed that quality information has significant influence on quality performance in ASEAN countries. Other studies have also found a positive relationship between quality information and performance such as Irfan and Kee (2013), Mehralian et al. (2017) and Valmohammadi and Roshanzamir (2015). Meanwhile,

Talib et al.(2013) illustrated that quality information and analysis has a negative effect on quality performance.



**Figure 1: The structure of the MBNQA performance excellence criteria**

Source: (Foundation for the Malcom Baldrige National Quality Award, 2002 Criteria for Performance Excellence).

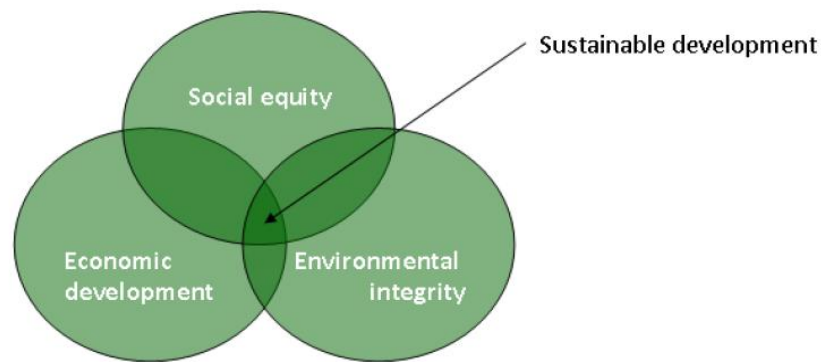
## 2.2 Corporate sustainability (CS)

Rapid growing in consumption rate and market demand for various products, has put pressures on business especially manufacturing industry to consider their impact on environment and public (Rajeev et al., 2017). Meanwhile, the world faces a decline in natural resources, global climate change, pollution, high competition and increasing cost of material and energy, and hence new approaches must be adopted by all actors on society for sustainable development (Morioka and Carvalho, 2016; Li et al., 2018).

During the last decade, the concept of sustainability is increasingly being applied by many organizations around the world (Garvare and Johansson, 2010; Morioka and Carvalho, 2016; Bastas and Liyanage, 2019).

Keeble (1988, P.20) defined sustainable development (SD) as “development that meets the needs and aspirations of the present generation without destroying the resources needed for future generations to meet their needs”. The definition has two main ideas, firstly, the ability to meet the needs especially the world poor needs, through equal resource and opportunities distribution. Secondly, the problem of limitation of growth and resource depletion forced by the ability of the environment to meet future needs. From this definition, corporate sustainability means that companies should consider the effect of their operations on society and environment by best utilization of natural resources (Davenport et al., 2018). SD refers to sustainability at macro-level whereas CS is linked to sustainability at micro-level or the corporate level (Dyllick and Muff, 2015). Meanwhile SD provides comprehensive picture of sustainability, CS has more suitable and applicable measuring for sustainability in manufacturing and business field (Asif and Searcy, 2014). Lozano (2012) defined CS as “a corporate activity seeking to achieve sustainability equilibrium, which consists of the economic, environmental, and social responsibility dimensions, for today as well as throughout the time dimension while addressing the firm's systems and its stakeholders”. CS stands on three main pillars known as triple bottom line (TBL) which integrates the economic, environmental and social aspects (Elkington, 1998) as illustrated in Figure 2. In the same way, Ortiz et al. (2009) described CS as progress that promotes welfare human being by providing health and safe environment and boost social, economic and environmental dimensions for present and future generations. It can also be recognized as dynamic state of equilibrium which can be achieved by balancing between ecological, economic and social pillars (Dempsey et al., 2011). Dyllick & Hockerts (2002) conceptualized the three dimensions in the company

context as the business case (economic), the natural case (environmental), and the societal case (social). Corporate sustainable development can enhance company's competitive advantages; through reducing internal cost, opening new markets and efficient use of waste (Tsoulfas and Pappis, 2006). Moreover, adoption of green practices has a positive effect in reducing cost of resources and energy consumption, fewer wastes, reducing environmental pollution and improving employees and communities' health. As a result, it will lead to grow in economic, environmental and social performance (Zhu and Sarkis, 2004; California and Reuse., 2004; Chen et al., 2006; Sezen and Çankaya, 2013).



**Figure 2: The three dimensions of sustainability. Source: (Davis et al., 2011)**

### **2.2.1 Environmental sustainability (ES)**

Firms are facing pressures to become greener, this implies that their activities do not have a negative effect on natural environment and following environmentally- friendly practices (Davenport et al., 2018). Yuan and Xiang (2018) pointed out that in order to become a green organization, it must transfer their operations into environmentally-friendly ones, and this can be achieved by making radical changes in operational processes of products.

The concept of green performance illustrates that companies should not just focus on quality of product, but also consider the impact of their operations on natural environment and improved environmental performance (Yu and Huo, 2019). Green performance (GP) represents the connection between firm's operation and environment. Davenport et al., (2018) stated that ES is associated with manufacturing production practices to protect natural environment, reduce usage of natural resources, reduce in energy consumption and use environmentally-friendly materials. Bansal (2004) clarified that environmental sustainability focuses on reducing the negative impact of firms on natural system, handling waste management, cleaner production, energy efficiency, pollution prevention and elimination of toxic materials usage. Product lifecycle's traditional view has changed in many manufacturing firms from resources acquisition to product development, delivery, consumption and recycling (Ho et al., 2016). Many studies such as Bansal (2004), Pereira-moliner et al. (2012), Dubey et al.(2015), Aquilani et al.( 2016) emphasized that organizations following environmentally-friendly practices can attain sustainable competitive advantages by improving system efficiency through increasing product quality and productivity at optimum cost. This can be achieved by improving environmental performance, including minimizing raw materials usage, cutting down energy consumption, decreasing waste and toxic substances and hence, fewer production steps and environmental accident. Green performance is represented by green product, green process (Xie et al., 2019) and green management practices (Li et al., 2018).

- Green process aims to minimize energy consumption during production process from raw material to product delivery (Ma et al., 2017; Dubey et al., 2015). It focuses on reducing pollution on water and air through efficient uses of energy and resources, and switching

from fossil fuels to bioenergy (Bansal, 2004; Kivimaa and Kautto, 2010).

- Green product aims to redesign the product in the way that reduces using toxic material and non-biodegradable substance through manufacturing process in order to minimize disposable and waste on environment (Bansal, 2004; Lin et al., 2013). It also includes enhancement in the durability or recyclability of products (Yu and Huo, 2019).
- Green management refers to adopting new organizational structures, management systems, strategies and policies to reduce the negative impact of firms operations and become more environmentally- friendly (Pereira-moliner et al., 2012; Aquilani et al., 2016; Li et al., 2018; Abbas, 2020)

### **2.2.2 Social sustainability**

Effective implementation of CS can't be achieved by only considering the environmental and economic pillars of TBL. Besides those two pillars, it is very important to start taking into consideration social dimension in decision making process (Govindan et al., 2016; Kannan, 2018). Till now, social sustainability has received little attention compared to environmental and economic sustainability, especially in emerging economies (Vafadarnikjoo et al., 2020). Companies start facing many social problems resulting from their operations, beginning with strikes because of poor health and safety conditions at work, to employees' rights violation (Badri Ahmadi et al., 2017). Jamali (2006) clarified that social sustainability focuses on an organization's impact on external and internal stakeholders' relationships. She also stated that social sustainability issues include public health, safety and work places condition, human rights, equity, employees'

rights and community engagement. Social sustainable system should ensure fair distribution and opportunity, provide social service, such as health and education, equity (Harris et al., 2001). According to Cooper (2004), social sustainability concerned with company performance accordance to social systems which they operate. Carter and Rogers (2008) emphasized that social sustainable company can attain long term survival through managing social issue in their operations. Bai and Sarkis (2010) highlighted the key elements for social sustainability including: human rights, worker health and safety, diversity, equity, supplier assessment and others social and safety related issues.

### **2.2.3 Economic sustainability**

Economic sustainability refers to companies continual growth and profit without harming society and environment (Dyllick and Hockerts, 2002). Doane and Macgillivray (2001) also described economic sustainability as a dynamic process for optimum allocation of scarce resources by making sure positive impact on social and environment pillars. Sezen and Çankaya (2013) emphasized that in order to make long term survival, the company should not just focus on financial performance, but also takes into consideration non-financial performance, which includes social and environmental aspects. Moreover, there are many kinds of economic capital that firms need to manage to achieve economic sustainability such as, financial capital (i.e. debt, profit), tangible capital (asset, land, equipment), intangible capital (i.e. reputation, inventory) (Dyllick and Hockerts, 2002). Zhu and Sarkis (2004) addressed the main elements for economic performance: profit, revenue growth, market share and productivity.

### **2.3 Linking total quality management with corporate sustainability**

Previous implementation of TQM can make sustainability implementation easier. TQM provides the base for adopting sustainability in all aspects. The main purpose of TQM system is to use resources effectively from acquisition to delivery by focusing on continuous improvement and customer satisfaction (Singh et al., 2018). TQM seeks to enhance system efficiency by eliminating defects, since product with poor quality damages organization reputation, increases cost and wastage of resource and human effort (Tasleem et al., 2018; Habib et al., 2019). Crosby's zero defect philosophy is very close to no waste environmental management (EM) system principle, pollution and waste are like defect and they must be eliminated (Pereira-moliner et al., 2012b). Therefore, TQM deployed practices and tools such as lean system and six sigma to improve system efficiency through empowerment of people, culture, reduce process variation, eliminate waste and integrating product and process with customer requirements (Bastas and Liyanage, 2019). Isaksson (2006) emphasized that organizational sustainability development component should be included in TQM system. Also, he focuses on process management as the most important tool for improving economic, environmental and social performance. According to Qasrawi et al. (2017), corporate sustainability should be connected with quality management since it has a great potential to improve firms in all TBL pillars. Many studies have concluded that TQM approach could help organizations to achieve excellence, efficiency, sustainability and competitive advantages by continuous improvement and focus on integration all functions and processes (Bastas and Liyanage, 2018; Fernandes et al., 2017; Terziovski and Hermel, 2011). Tasleem et al. (2018) found a positive relationship between TQM and CS development, Abbas (2020) also concluded that

TQM has a positive impact on CS. In addition, Aquilani et al. (2016) stated that TQM factors foster sustainability development. Moreover, Siva et al. (2016) emphasized that TQM practices enhance CS. On the other side, other researchers found contradictory results, for example, Li et al. (2018) found a negative effect between TQM and green innovation in Chinese manufacturing. Since there are few studies which empirically explore the relationship between TQM and CS, particularly in Palestine, the following hypothesis is proposed.

**H1:** Total quality management has a positive impact on CS in Palestinian manufacturing companies.

## **2.4 Corporate social responsibility (CSR)**

During the last two decades, many of studies have been conducted on CSR, and it is considered one of important topic on business world (Lozano, 2008; Nejati and Ghasemi, 2012). Despite of its increasing importance, there is no consensus definition for CSR available (Wood, 2010). Generally, CSR is considered as management philosophy (Berger et al., 2007; Carroll and Shabana, 2010).

According to Carroll (1979, P500) CSR can be defined as the “social responsibility of a business that encompasses the economic, legal, ethical and discretionary expectations that society has of organizations at a given point in time.” Also, Hemingway and MacLagan (2004) illustrated that CSR as the “extent to which companies should promote human rights, democracy, social and community improvement and sustainable development objectives through the world.”

CSR practices improve organizational ability to attain competitive advantage and achieve sustainable development (Gorski, 2017). Moreover, it will increase customers' and employees' satisfaction which significantly

enhance firms' reputation (Asrar-ul-Haq et al., 2017). Awan et al. (2017) confirmed that the manufacturing firm's participation in social activities and take into consideration their impact on environment, which will lead to reduction in emissions, waste and energy saving. In addition, it will enhance organizational performance and market share. Turker (2009) proposed a CSR model with stakeholders and splits CSR activities into four categories, namely CSR to social and non-social stakeholders, CSR to customers, CSR to employees, and CSR to the government. Maignan and Ferrell (2000) also categorize CSR practices into four groups, namely economic, legal, ethical and discretionary citizenship. The present study is based on three dimensions of CSR from Turker (2009) and Maignan and Ferrell (2000) studies, namely CSR to the community, CSR to customers and CSR to employees.

- CSR to community represents an organizational commitment towards the wellbeing of the society, such as financial and non- financial support to educational institutions and maintenance of city (Martinez-Conesa et al., 2017; Mehralian et al., 2017; Shahzad et al., 2019; Abbas, 2020)
- CSR to customers refers to firm's obligation toward its customers. It includes ensuring of customer satisfaction and high product quality, customers complaints protection and provision of accurate information (Martinez-Conesa et al., 2017; Shahzad et al., 2019; Abbas, 2020).
- CSR to employees focuses on firms' responsibility toward its employees by ensuring healthy and safe working conditions, employees' development through supporting them to have additional education and training, providing equal opportunity and offering valuable salary (Martinez-Conesa et al., 2017; Mehralian et al., 2017; Shahzad et al., 2019; Abbas, 2020).

A study by Makhdoom and Anjum (2016) demonstrated that TQM and CSR are positively linked to each other and have a significant effect on employee's turnover intention. A study in the manufacturing industries in Pakistan by Abbas (2020) illustrated that TQM practices have a positive association with CSR, and similar impact of CSR on green performance have been found. Furthermore, Sadikoglu and Olcay (2014) revealed that TQM practices partially contribute to SCR, the study showed knowledge and process management, supplier quality management and strategic quality planning significantly impact CSR, while other TQM practices such as leadership, training and customer focus have no significant effect on CSR in the Turkish manufacturing and service industries. However, a study by Del Río-Rama et al. (2017) revealed that all TQM practices except process management have an insignificant relationship with CSR. Therefore, a hypothesis to test this relationship is as follows:

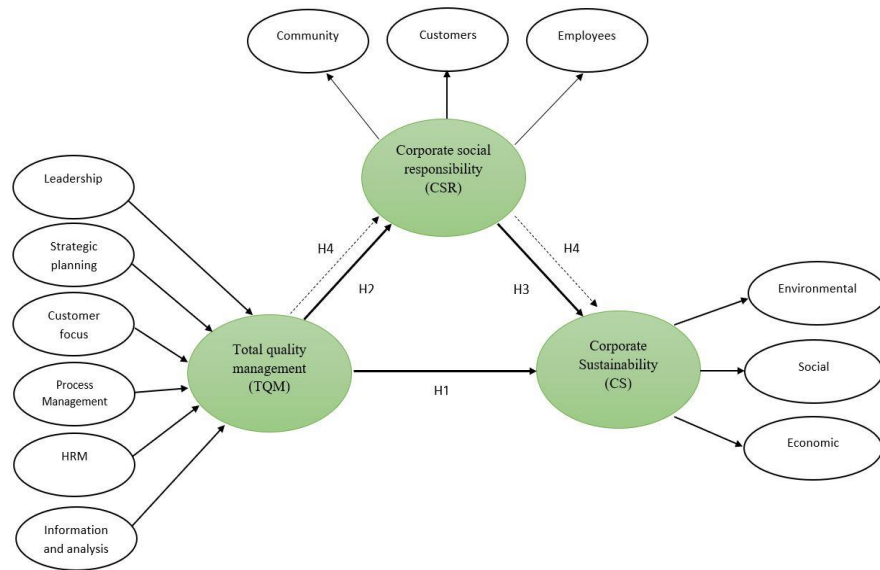
**H2:** Total quality management has a positive impact on corporate social responsibility activities in Palestinian manufacturing companies. A recent study by Malik and Kanwal (2018) stated that CSR disclosure has a positive influence on financial performance in pharmaceutical firms in Pakistan. Shahzad et al. (2019) explored the relationship between CSR and CS in Asian countries and found a positive interdependent relationship. Both Martinez-Conesa et al.(2017) and Ali et al. (2019) confirmed in their study that CSR has a positive relationship with firms performance. On the other hand, Mehralian et al. (2017) found CSR has no direct significant impact on organizational performance in Iranian pharmaceutical industry. Similarly, Brammer et al. (2006) emphasized a negative association between CSR and performance. Hence, the proposed hypothesis is:

**H3:** Corporate social responsibility activities have a positive impact on corporate sustainability in Palestinian manufacturing companies

To test the mediation effect, the following hypothesis is proposed:

**H4:** Corporate social responsibility activities mediate the relationship between total quality management and corporate sustainability.

Based on the discussion presented so far, four hypotheses are drawn to construct the model as illustrated in Figure 3.



**Figure 3: Conceptual research model and hypotheses**

As presented in above figure, the TQM practices causes and influence on TQM system implementation. Therefore, they are presented as formative constructs (from the first-order to second-order construct). On other side, CS performance indicators are measuring the level of sustainable performance in companies, so, they are represented as reflective construct (from second-order to first-order construct) (Qureshi et al., 2019). In the same way, the CSR activities are measuring and reflect the social accountability of the companies, so, they are considered reflective constructs (Qureshi et al., 2019).

The literatures overview and gap analysis of integrated model are presented in Table 1.

**Table 1: Integrated TQM, CS and CSR models overview and gap analysis**

Author (year)	TQM	CS R	MBN QA	Other QM	Sustainability			Remarks
					Environmental	Social	Economic	
Abbas ( 2019)	✓		✓		✓ ✓		✓	Confirmed a positive relationship between TQM and sustainability (TBL) through the mediating effect of knowledge management by using MBNQA model in manufacturing and service firm at Pakistan.
Abbas (2020)	✓	✓	✓		✓			Analyzed the relationship between TQM and green performance through corporate social responsibilities as mediator using MBNQA model in manufacturing firms at Pakistan. And concluded that they have a positive impact on each other. Social and economic aspects were not included.
Aquilani et al.(2016)	✓				✓	✓	✓	Established a model that integrate TQM and sustainability (TBL). Identify critical success factors to foster sustainability through QM processes and value Co-creation.
Asif et al. (2011)			✓		✓	✓	✓	Presented framework deploy EFQM and Baldrige model to integrate sustainability into business process.
Bastas and Liyanage (2019a)				✓	✓	✓	✓	Developed model that incorporate ISO9001 quality management system and supply chain management for organizational sustainability (TBL) in business sectors.

Dubey et al. (2015)	✓				✓		Investigated the impact of supplier relationship and TQM on environmental performance under the influence of leadership and institutional pressure as mediator at Indian manufacturing firms.
Francis (2009)	✓				✓		Proposed a link between TQM and environment, great anew model take in consideration environmentally requirements during product design as part of TQM
Govindan (2014)	✓				✓	✓ ✓	Investigated the relationship between TQM and supply chain management on sustainability (TBL) in automotive industry.
Kuei and Lu (2013)	✓				✓	✓ ✓	Developed frameworks that integrated TQM principles and sustainability (TBL)
Makhdoom and Anjum (2016)	✓	✓					Explored the relationship between TQM and CSR, and have founded that they are related to each other and have positive influence on employee's and firm performance in textile industry of Pakistan
Mehralian et al. (2017)	✓	✓					Concluded that CSR and TQM are related to each other and positively impact on firm's performance in Iranian pharmaceutical industry.
del Río-Rama et al. (2017)	✓	✓		✓			Found insignificant relationship between TQM and CSR using EFQM model at tourism sector in Spain.

Sadikoglu and Olcay (2014)	✓	✓						Investigated impacts of TQM practices on various performance measures at manufacturing companies in Ethiopia.
Shahzad et al. (2019)		✓			✓	✓	✓	Studied the impact of employee's knowledge absorptive capacity on corporate sustainability with mediating role of CSR in manufacturing sector.
Adem and Virdi (2020)				✓	✓	✓	✓	Confirmed a positive association between QM relations (management and employee) and TBL sustainability performance in manufacturing companies.
Our study	✓	✓	✓		✓	✓	✓	Investigated the relationship between TQM and TBL sustainability performance through CSR as mediator using MBNQA model in Palestinian manufacturing firms. And concluded that they have a positive impact on each other.

## **Chapter Three**

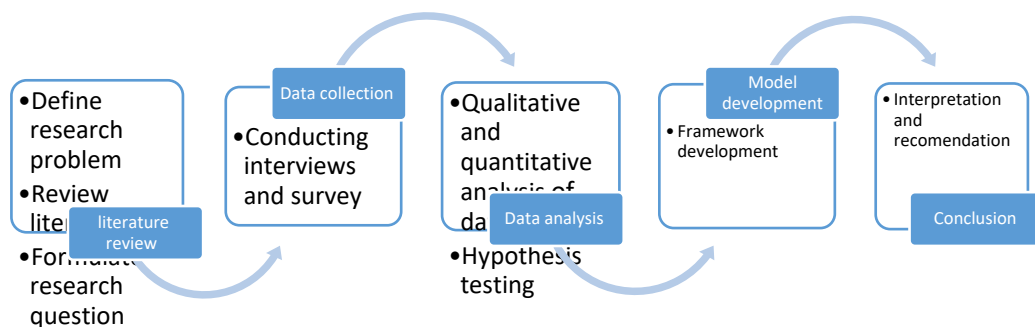
### **Research methodology**

In an empirical research, the research design aims to answer specific research questions and test the hypotheses through using a comprehensive plan for data collection. This chapter will describe the research design, which mainly consist of data collection process, population targeted sampling procedure, and the questionnaire design.

#### **3.1 Overview**

Since there are rare studies about the relation between TQM and CS in Palestine, exploratory research will be established to explore how TQM impact CS (environmental, social and economic) through the mediating effect of CSR. The main aim of an exploratory research is to identify the boundaries of problems or situations of interest, and to clarify the main factors or variables that might be found relevance to the research (Van Wyk, 2012). In current research, a mixed method approach was used by collecting qualitative and quantitative data. This approach can help to gain a full information and better understanding of research problem (Creswell, 2014). Adopting this method helped to give more insight on TQM practices, social responsibilities and sustainable performance in manufacturing sectors. The first stage of the current study was identifying research problem, objective and scope of the study, and then literature review was conducted to review TQM practices, CS and CSR and formulate research questions and hypotheses. Then, the second stage was data collection through semi-structured interviews and an on-line survey. Qualitative method involved conducting semi-structured interviews with quality managers in manufacturing sector. So, twelve semi-structure interviews were conducted in four main industrial sectors (steel, plastic,

food, chemical). According to the current situation of Covid-19 pandemic, it was difficult to make personal interviews with all factories. Therefore, six interviews were held by phone. The interviewees included one general manager, ten quality managers, and one production manager. To be able to analyze the data generated from interviews, a thematic analysis approach was used (Braun and Clarke, 2006). In order to have a comprehensive understanding of TQM practices and their impact on sustainable development, a quantitative approach was deployed using a survey. The survey elements were identified from literature and the output of interviews. The survey participants were general manager, quality manager, production manager at manufacturing sectors. In the third stage, the data were analyzed and the hypotheses have been tested to answer the research questions. Next, in the fourth stage, the framework has been developed to explain the relationships between TQM, CS and CSR as a mediator. Finally, the fifth stage included conclusion and recommendations. The methodology followed in this research is summarized in Figure 4.



**Figure 4: Research methodology**

### 3.2 Target population and sampling procedure

The study population consisted of manufacturing companies in four manufacturing sectors (Food, Chemical, steel, plastic industries) in the West Bank in the years 2019/2020. The Palestinian ministry of national economy and Palestinian federation for industries were contacted to get the names and number of valid registered manufacturing companies. Based on the data provided, the targeted population includes (115) registered active companies, as shown in Table 2.

**Table 2: Distribution of companies by manufacturing sector**

No.	Industrial Sector	Population
1	Food industry	57
2	Chemical	18
3	Steel	22
4	Plastic	18
	Total	115
	Requested sample	60

It is necessary to determine the required minimum sample size in surveys' situation and other statistical methods, to generalize the results on the population (Saunders et al., 2009). To obtain a statistically representative sample size of population, Hair et al. (2016) and Barclay et al. (1995) recommendation was followed and 10 times rule was adopted, which refer to “10 times the largest number of structural paths directed at a particular construct in the structural model”. Based on the above rule, 60 responses

were requested to complete the survey. The data was collected from October 2020 to January 2021 through interviews as well as electronic questionnaire, as mentioned before. In this period, the area was affected by Covid-19 pandemic outbreak. As a result, an electronic questionnaire was established by Google Drive in order to reach the factories that were difficult to reach. In response to 115 distributed questionnaires, 67 usable responses were received with 58% response rate.

### **3.3 Questionnaire design**

The questionnaire was designed to test the hypotheses of the research model which is composed of three main constructs (TQM, CS and CSR). Five -point Likert scale was used to evaluate the items, where one represents strongly disagree and five strongly agree. The survey questions were developed based on reading previous literature review. The questionnaire consisted of four main sections:

- First section: (10 Items) general information about the company and the respondents. This section is designed to collect data that describe both the firm and the respondent such as the participants' gender, organization's sector, number of employees, years of experience in the organization, respondents' position, type of quality certificate and company's geographic location.
- Second section: forty-two items related to six of MBNQA model for TQM practices were adopted. Leadership and customer focus were measured through six items for each, strategic planning, process management and information analysis were measured through five items, HRM was measured through seven items.

- Third section: seventeen items associated to the three dimensions of CS were placed, environmental and social sustainability were measured through six items, economic sustainability was measured through five items.
- Fourth section: for the last section, fifteen items regarding three aspects of CSR were set, CSR to community contained four items, CSR to customers composed of five items and CSR to employees was measured through six items.

The questionnaire was revised with a group of experts to ensure its validity and consistency of the questions. All gave a concern of length, word and number of sentences have been considered and modified. The last edition of the survey was written in English (See Appendix A) but based on the fact that the mother language in Palestine is Arabic, it was translated to Arabic (See Appendix B).

## **Chapter Four**

### **Data analysis and results**

This chapter analyzes and presents the results of the qualitative and quantitative data collected from interviews and questionnaires. The first section explores the TQM practices, TBL sustainability performance and CSR activities from the viewpoint of specialists in this area who were interviewed. Thereafter, this chapter presents the results of descriptive statistics and hypotheses testing by using (PLS-SEM) program, this study determines the current situation of TQM practices, CS and CSR in Palestinian manufacturing organizations.

#### **4.1 Interviews analysis**

The first step in the qualitative approach was conducting semi structured interviews with quality managers at manufacturing sectors. So, 12 semi structured interviews were held with experts working in 10 companies covering four main manufacturing sectors (chemical, food, steel, plastic) (as summarized in Table 3). Ten quality managers, one production managers and one general manager were interviewed to identify the quality practices that help to achieve sustainable performance. All interviews with respondents were audio-recorded by using a recording machine, this will help to collect data more accurately, easy analysis of interview and unbiased (Willis, 2015).

**Table 3: Characteristics of the companies and role of the interviewees**

No	Company sector	Company	Interviewee Job role	Experience (years)
1	Chemical	Company I	Quality manager	6
2	Food	Company C	Quality manager	15
3		Company D	Quality manager	15
4		Company F	Quality manager	10
5		Company G	Quality manager	15
6		Company J	Production manager	15
7	Steel	Company E	Quality manager	11
8			Laboratory manager	6
9	Plastic	Company A	General manager	15
10			Quality manager	7
11		Company B	Quality manager	9
12		Company H	Quality manager	7

Thematic analysis approach was followed to analyze data. Braun and Clarke (2006) illustrated that thematic analysis as a simple method for identifying, analyzing and reporting patterns (themes) within data. According to Braun and Clarke (2006), the thematic analysis consisted of six phases. The first phase started by collecting data becoming familiar with it through reading it several times. Then, generating codes for relevant data, codes refer to “the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon” (Boyatzis, 1998,63). After the data have been collected and coded, the next step involved sorting the code into potential themes. Then reviewing themes were conducted to refine them and make sure they support the study. The next phase involved generating a clear definition for each theme. After themes have been set, the final step implied analyzing and writing up a concise and coherent report. The codes generated and central themes are summarized in Table 4.

**Table 4: Summary of identified codes, and central themes**

Code	Issues discussed	Central themes
Government regulation	Green policy	Governmental Involvement in ENS
legal		
Government support	Green practices	
Obligation		
Commitment	Top management role	TQM practices
Aligned	Formulate strategy and policy	
Satisfaction	Customer requirement	
Continuous improvement	KPI	
Efficiency	Lean system and six sigma	
Quality system	Apply ISO9001	
Employees morale Empowerment	HRM	
Knowledge management	Information system	
Needs	Inventory control	
Technology	Recycling	
needs	Waste management	
Green product	Environmentally-friendly material	
Electronic	Less paper	
Clean energy	Energy saving	
Environmentally management	Implement ISO14001	
Occupational safety	ISO 45001	
proactive	ISO 22000	
equity	Stakeholders relation	
right		
Community health	Infection control	
Code of ethic	Customers retention	
Long-term profit	Cost reduction	
Market share		
commitment	Stakeholders accountability	CSR practices
support	Community	

	communication	
Reputation	Customer loyalty	
Responsibilities	Employees health	
development		
Awareness	Hire people with special need	

The main topic was to detect themes that demonstrate the current situation of TQM practices and social responsibility initiative. An additional goal was to explain how TQM impacts on corporate sustainability development (environmental, social and economic) aspects at manufacturing sectors. The interviews results were categorized into four main themes as presented below:

#### **First theme: Governmental Involvement in environmental sustainability**

The majority of interviewees spotted the light on the important role that government play for ENS, represented in Ministry of National Economy, since the government has the force to make it mandatory for all manufacturing firms to follow environmental policy and green practices. Also, they highlighted on the importance of government support to encourage the organizations to shift from traditional way to green manufacturing.

#### **Second theme: TQM practices**

This theme aimed to identify quality practices implemented by Palestinian manufacturing organizations. Most interviewees highlighted on the important role of top management commitment as they considered a driver for effective implementation of quality and formulate a clear strategy and policy that aligned with organizational sustainable development objective. They also confirmed that customer satisfaction focuses were the core issue for quality, and how their requirements were integrated in their product and process design. Moreover, they clarified the importance of process

management represented in quality control, review KPIs for continuous improvement and deploying practices such as lean system and six sigma which aim to reduce defects and enhance process efficiency. Furthermore, many of plants started implementing ISO 9001 which determines the requirement for quality management system. Human resource plays a dynamic role, since the employees are considered as one of the most valuable assets for the company, all interviewees emphasized that it is essential to invest in their employee's competence. They focused on providing health and safe working environment, motivating, training, and empowerment to increase employee's morale. Information system is another important topic that must be considered, it involves analyzing the relevant data to optimize organizational performance, and ensuring having reliable, adequate and accurate information.

### **Third theme: corporate sustainability**

This theme focuses on corporate sustainable performance. Most interviewees emphasized on green growing; which means keeping growing by taking into consideration the effect of their operation on both environment and society. They confirmed that environmental sustainability is an important issue and must be integrated in their business. It's represented in environmentally- friendly practices such as recycling, waste management, using environmentally-friendly materials and eliminating toxic materials. The interviewees focused on energy saving by using clean and renewable energy, deploying electronic system rather than paper, which in turn affects economic performance. Among of these practices, recycling was the most implemented; they developed plans to dispose paper or waste either by selling to other specialized companies to reuse them, or developing a special department to recycle the waste inside the organization. Some organizations implemented environmental management

systems such as ISO 14001, which provides tools and best practices for applying environmental management. On social side, they spotted the light on importance of health and safety of the employees and surrounding community. Particularly at this time were data collected under Covid-19 pandemic, they all emphasized on infection control procedure to promote community health and safety. In order to ensure employees safety and health, few organizations started adopting ISO 45001 (occupational health and safety management system), which provides standards and requirements for health and safe work environment and preventing injury. While in food industry, many organizations guarantee the safety of their products by implementing ISO 22000 (food safety management system). In addition to that, they ensured providing high quality products and commitment to the code of ethics. In order to achieve economic sustainability, they confirmed on continual growth and long- term profit but without harming society and environment by focusing on cost reduction and efficient resources utilization.

#### **Fourth theme: CSR activities.**

In the final theme, we highlighted on the social responsibilities' practices. All of the interviewees believed in the important role of human factor on business continuity, and it should be integrated in their business activities. Many firms participated in social activities, they have voluntary works, open communication channel with the community, provide financial and non- financial support, ensure customers satisfaction and take care of their employees' safety and health. Many organizations stated the importance of hiring the people with special needs and gives them special tasks that suit their condition, so they feel that they are playing an effective role in their society. As mentioned before, because of Covide-19 pandemic, all interviewees gave the priority to their employees' health and started

implementing prevention procedures, e.g. increased attention to hygiene, providing sterilization, keeping distance between people and work from home.

## **4.2 Questionnaires analysis**

To investigate the relation between TQM, CS and CSR, Smart PLS 3.2.7 program was employed. Smart PLS is one of the most leading software tools for partial least squares structural equation modeling (PLS-SEM) . Cho et al. ( 2009) clarified that SEM is a technique for multi-variable analysis established to measure the cause-and-effect relationships. In the same direction, Ali et al. (2018) confirmed that SEM is a promising method that is helpful for path modeling and anticipating. PLS is helpful when the distribution is not normal and the sample size is small. Since our sample is almost small, PLS-SEM technique was adopted to analyze the data which mainly consisted of two steps: (1) assessment of measurement model, which includes reliability and validity analysis, (2) structural model, which includes hypotheses testing and determine model parameters (Hair et al., 2016).

### **4.2.1 Study population**

The demographic analysis of the data demonstrated that most of the respondents 56.7% were from food industry, followed by steel with 19% and plastic 11.9%, the remaining respondents represented chemical with 10.4%. The organizations were divided into small, medium and large group based on their number of employees. According to the Organization for Economic Co-operation and Development (OECD) standard, the majority of organizations are medium (49.3% of firms have from 50-249 employees while 38.8% of firms are classified as small size with 1-49 employees) (OECD, 2005). On the other hand, Palestinian Ministry of National

Economy classification considers the majority as large (89.6% of firms have more than 20 employees while 10.4% classified as medium size with 10-19 employees). The quality systems implemented in the companies were illustrated in Table 5. The company can implement more than one quality system, 40.3% of the companies implementing ISO 9001 quality management system, 28.4% of the companies having ISO 22000 system, 22.4% of the companies implementing HACCP, 13.4% of the companies have GMP, while only 9% of the companies have ISO 45001. There is a tendency toward environmental management system with 19.4% of the companies implementing ISO 14001, 22.4% of the companies have other systems (PS, Halal and Pal Gap). It is important to mention that 25.4% of the companies don't implement any quality system. Complete details of the respondents' demographics are summarized in Table 5.

**Table 5: Demographic characteristics**

Characteristic	Distribution	Frequency (n=67)	Percentage
Gender	Male	51	76.1%
	Female	16	23.9%
Manufacturing sector	Chemical	7	10.4%
	Food	38	56.7%
	Steel	13	19.4%
	Plastic	8	11.9%
	Other	1	1.5%
Organization type	Family business	26	38.8%
	Public joint stock	10	14.9%
	Private joint stock	31	46.3%
Number of employees	10-19	7	10.4%
	20-49	19	28.4%
	50-99	15	22.4%
	100-249	18	26.9%
	More than 250	8	11.9%
Geographic location	Ramallah	13	19.4%
	Nablus	15	22.4%
	Tulkarm	4	6%

	Jenin	3	4.5%
	Bethlehem	1	1.5%
	Jerusalem	3	4.5%
	Hebron	19	28.4%
	Qalqilya	1	1.5%
	Jericho	7	10.4%
	Tubas	1	1.5%
Job position	General manager /CEO	11	16.4%
	Quality manager	29	43.4%
	Administrative manager	7	10.4%
	Production manager	11	16.4%
	Other	9	13.4%
Education	Diploma	2	3%
	Bachelor	49	73.1%
	Master's degree	16	23.9%
	PhD	0	0
Job experience	Less than 2 years	5	7.5%
	2-5 years	14	20.9%
	6-10 years	25	37.3%
	11-15 years	9	13.4%
	More than 15 years	14	20.9%
The quality system	ISO9001	27	40.3%
	ISO14001	13	19.4%
	ISO 45001	6	9%
	ISO22000	19	28.4%
	HACCP	15	22.4%
	GMP	9	13.4%
	Other	15	22.4%
	None	17	25.4%
Market	Local market	66	98.5%
	Regional market	39	58.2%
	Global market	19	28.4%

#### 4.2.2 Assessment of constructs implementation

General description was used to assess the level of implementation of TQM practices, CS (environmental, economic and social) dimensions and CSR as mediator in manufacturing company in West Bank. A five- point Likert was adopted, with 5 indicate strongly agree and 1 indicates strongly

disagree. To determine the level of implementation for each latent variable, responses were classified into five equal grades, these grades were calculated by dividing the response range (i.e., 5 which represent “strongly agree” minus 1 which represent “strongly disagree”) by the number of levels (i.e., 5 levels) in the Likert scale used. This is represented by the following formula:  $(5-1)/4 = 0.8$ . The interval and their corresponding level of implantation are represented in Table 6.

**Table 6: Intervals of levels of implementation**

<b>Interval</b>	<b>Level of implementation</b>
1 to less than 1.8	Very low
1.8 to less than 2.6	Low
2.6 to less than 3.4	Moderate
3.4 to less than 4.2	High
4.25	Very High

Table 7 demonstrates the level of implementation in a descending order. The results indicate that the overall mean implementation level of TQM practices, sustainability and CSR were 4.259, 4.117 and 4.344, respectively, with very high level of implementation for TQM and CSR, and high level of implementation for CS in Palestinian companies. For TQM practices, customer focus has the highest level with 4.373, followed by information and analysis 4.322, process management 4.29, leadership 4.263 and strategic planning 4.256, while human resource management showed to have the lowest level of implementation with 4.047. In terms of sustainability, the most implemented dimension is social performance with 4.356, environmental performance showed to have the minimum level with 3.935. For CSR activities, the results revealed that customer aspect has the maximum level of implementation with 4.585, while the minimum level was for employee's aspect with 4.060.

**Table 7: Level of implementation of the TQM practices, CS dimensions and CSR.**

Construct	Mean	Standard deviation	Level of implementation
<b>Total for TQM practices</b>	<b>4.259</b>	<b>0.821</b>	<b>Very High</b>
Customer Focus	4.373	0.755	Very High
Information and analysis	4.322	0.813	Very High
Process Management	4.290	0.831	Very High
Leadership	4.263	0.772	Very High
Strategic Planning	4.256	0.830	Very High
Human Resource Management	4.047	0.929	High
<b>Total for Corporate sustainability</b>	<b>4.117</b>	<b>0.873</b>	<b>High</b>
Social sustainability	4.356	0.743	Very High
Economic sustainability	4.060	0.901	High
Environmental sustainability	3.935	0.974	High
<b>Total for CSR activities</b>	<b>4.344</b>	<b>0.812</b>	<b>Very High</b>
Customer	4.585	0.657	Very High
Community	4.388	0.797	Very High
Employees	4.0600	0.982	High

#### 4.2.3 Assessment of the measurement model

Measurement model studies the relation between the indicators and their construct which examined through confirmatory factor analysis (CFA). In order to assess the reflective measurement model, the reliability and the validity of the construct are vital measures that must be evaluated (Hair et al., 2016). The reliability is referred to the overall measure consistency, which means when the researcher repeats the experiment several times under same conditions, the same results will be obtained (Sekaran and Bougie, 2010). Validity represents the extent to which variable measures what it is intended to measure (Sekaran and Bougie, 2010). Assessment of the reflective measurement model is to determine the internal consistency,

reliability and validity. The internal consistency is examined by Cronbach's alpha and composite reliability, while the validity is estimated using convergent and discriminant validity. It is also important to determine item loading (indicator reliability). Composite reliability (CR) is used to measure construct reliability, the CR value above 0.708 is considered a good indicator of construct reliability (in exploratory research, 0.6-0.7 is considered acceptable) (Hair et al., 2011). Table 8 illustrates the result of reliability and validity analysis, as reported in the table below, all the constructs are reliable since the CR values are higher than 0.902. Thus, the internal consistency is acceptable.

The outer loading, which is also commonly known as indicator reliability, refers to how much an item contributes to its construct. The outer loading value were calculated by using PLS algorithm with the default setting of 300 iteration and factor analysis as weighting scheme. According to Hair et al. (2016), the factors loading should be above 0.7. As illustrated in Table 8, the items loading ranged between (0.678-0.927) which indicate an acceptable level of indicator reliability.

Validity of the indicators and their construct are assessed using convergent and discriminately validity analysis. Convergent validity was defined as “extent to which a measure correlates positively with alternative measures of the same construct”(Hair et al., 2016, p.137). Convergent validity is measured through average variance extracted (AVE), which is calculated by taking average squared indicators loading. To confirm the validity of the construct, the AVE value should be more than 0.5 (Hair et al., 2011).

**Table 8: Results of reliability and validity analysis**

<b>Construct</b>	<b>Item NO.</b>	<b>Reflective Indicators</b>	<b>Item Loading</b>	<b>CR</b>	<b>AVE</b>	<b>Reference</b>
<b>(A)TQM elements Leadership (LD)</b> <b>(Two items deleted)</b>	LD1	Top management is committed to the culture of change	0.817	0.904	0.703	Abbas (2020)
	LD2	Top management actively participates in quality management and improvement process	0.874			Adem and Virdi (2020)
	LD3	Top management allocates sufficient resources for products quality improvement	0.879			Zaidi and Ahmad (2020)
	LD6	Top management regularly holds meetings discusses and reviews quality-related issues	0.778			Ahmed et al. (2020)
<b>-Strategic Planning (SP)</b> <b>(One item deleted)</b>	SP1	Clear vision and mission statements	0.845	0.927	0.760	Talapatra et al. (2019)
	Sp2	Sets and reviews short and long-term goals	0.920			Abbas (2020)
	SP4	The policies and plans consider all stakeholders' needs	0.882			Shafiq et al. (2017)
	SP5	The strategies and plans are focused on quality improvement	0.839			Oliveira et al. (2017)
<b>-Customer Focus (CF)</b>	CF1	Designing products by considering the customers' requirements	0.702	0.915	0.642	Singh et al.(2018)
	CF2	Customer's satisfaction feedbacks are taken regularly	0.828			Zaidi and Ahmad (2020)
	CF3	Improve customers' satisfaction	0.820			Abbas (2020)
	CF4	conducts market study regularly to determine customers' needs and expectation	0.824			Zaidi and Ahmad (2020)
	CF5	Resolve customers complaints	0.778			Oliveira et al. (2017)
	CF6	Keeps a strong relationship with customers	0.846			Abbas (2020)
<b>-Process Management (PM)</b>	PM1	Automated processes and minimizes human error chances	0.797	0.918	0.738	Abbas (2020)
	PM3	Inspect and track key processes	0.913			Oliveira et al. (2017)

(one item deleted)						
	PM4	Evaluate and improve business processes regularly	0.883			Talapatra et al. (2019)
	PM5	Establishes Key Performance Indicators (KPIs)	0.839			Adem and Viridi (2020)
<b>-Human Resource Management (HRM)</b>  (Two items deleted)						
	HRM2	Training and development sessions	0.920	0.939	0.755	Shafiq et al. (2017)
	HRM3	Effective work recognition and reward system	0.862			Oliveira et al. (2017)
	HRM5	Measures employee's satisfaction regularly	0.839			Yusr et al. (2017)
	HRM6	Maintain health, safety and well-being of all employees	0.895			Zaidi and Ahmad (2020)
	HRM7	Quality is all employee's responsibility	0.826			Ahmed et al. (2020)
<b>-Information and analysis (IA)</b> (one item deleted)	IA1	Effective information and reporting system	0.830	0.903	0.699	Abbas (2020)
	IA3	Top management uses quality data to make decisions and plans	0.800			Yusr et al. (2017)
	IA4	Coordination between all department	0.897			Abbas (2020)
	IA5	Charts and graphs are used to monitor quality	0.813			Zeng et al. (2015)
<b>(B) Corporate sustainability -Environmental sustainability (ENS)</b>	ENS 1	Increased the rate of purchase of environmentally friendly material	0.834	0.903	0.608	Longoni et al. (2016)
	ENS 2	Direct and indirect toxic materials are reduced	0.801			Abdullah et al. (2019)
	ENS 3	Increased use of recycable materials and reduce waste	0.721			Ahmed et al. (2020)
	ENS 4	Increased use of renewable energy	0.678			Rawashdeh (2018)
	ENS 5	Reduced the consumption rate of energy and resources during production processes	0.789			Afum et al. (2020)
	ENS 6	Reduced the risk of environmental accidents such as	0.843			Dubey et al. (2015)

		waste leakage and pollution				
<b>Social sustainability (SS)</b>	SS1	Occupational health and safety management system	0.917	0.948	0.754	Badri Ahmadi et al. (2017)
	SS2	Employees rights	0.886			Badri Ahmadi et al. (2017)
	SS3	Improving community health and safety	0.889			Kumar and Anbanandam (2018)
	SS4	Reducing the negative impact of the plant's activities on the local community	0.864			Jamali (2006)
	SS5	Improving the quality of products and commitment to the code of ethics.	0.873			Badri Ahmadi et al.(2017)
	SS6	Developing economic activities in the community and providing more job opportunities	0.776			Kumar and Anbanandam (2018)
<b>Economic sustainability (ECS)</b>	ECS1	Growth profits due to reduced energy and material consumption	0.791	0.902	0.648	Longoni et al. (2016)
	ECS2	increased market share	0.849			Afum et al. (2020)
	ECS3	Decreased cost of energy consumption	0.788			Zhu and Sarkis (2004)
	ECS4	increased in the quality of the products provided while saving the operational costs	0.811			Jamali (2006)
	ECS5	Reduced costs of waste treatment and disposal	0.784			Bansal (2004)
<b>(C) Corporate social responsibility - Community</b>	CMT1	Have open communication channel with the community	0.869	0.915	0.728	Martinez-Conesa et al. (2017)
	CMT 2	Creates job opportunities	0.811			Turker (2009)
	CMT 3	Provides financial and non-financial support to educational institutions	0.889			Abbas (2020)

<b>(CMT)</b>	CMT 4	Provides financial support to people in need	0.842			Maignan and Ferrell (2000)
<b>Customer (CUS)</b>	CUS1	Endeavors for Customer satisfaction	0.837	0.936	0.747	Turker (2009)
	CUS2	Provide accurate information about products	0.808			Maignan and Ferrell (2000)
	CUS3	Put fair prices for products	0.820			Martinez-Conesa et al. (2017)
	CUS4	Response to customer complaint	0.927			Abbas ( 2020)
	CUS5	Respect's consumers rights	0.923			Turker (2009)
<b>Employees (EMP)</b> (one item deleted)	EMP1	Provide a safe and healthy working environment	0.891	0.928	0.723	Abbas (2020)
	EMP2	Supports employees willing to acquire additional education	0.737			Maignan and Ferrell (2000)
	EMP3	Offer a valuable salary	0.784			Turker (2009)
	EMP4	provide benefits to the employees	0.897			Turker (2009)
	EMP5	Encourage the employees to develop their skills	0.927			Abbas ( 2020)

As shown in Table 8, the AVE value for all constructs are above 0.5 threshold, therefore convergent validity is approved. Discriminant validity illustrated how the indicators in different construct are correlated with each other. Fornell and Larcker (1981) clarified that discriminant validity can be determined by calculating square root of AVE of the construct. The value should be higher than other correlation value between the constructs. As displayed in Table 9, the square root of AVE is higher than other constructs correlation, so discriminant validity is confirmed.

**Table 9 : Discriminant validity check (square root of AVE is shown on the diagonal in bold)**

Construct	LD	SP	CF	PM	HRM	IA	ENS	SS	ECS	CMT	CUS	EMP
LD	0.838											
SP	0.828	0.872										
CF	0.734	0.796	0.801									
PM	0.712	0.824	0.697	0.859								
HRM	0.698	0.829	0.628	0.833	0.869							
IA	0.703	0.811	0.769	0.828	0.769	0.836						
ENS	0.721	0.757	0.719	0.736	0.661	0.703	0.780					
SS	0.785	0.777	0.733	0.686	0.788	0.682	0.713	0.868				
ECS	0.655	0.686	0.715	0.705	0.639	0.690	0.739	0.670	0.805			
CMT	0.750	0.748	0.751	0.711	0.719	0.665	0.648	0.826	0.740	0.853		
CUS	0.716	0.671	0.785	0.657	0.568	0.693	0.596	0.796	0.696	0.774	0.864	
EMP	0.751	0.826	0.631	0.713	0.848	0.665	0.698	0.817	0.592	0.777	0.616	0.850

In addition to Fornell and Larcker method, discriminant validity can be measured using Heterotrait–Monotrait ratio of correlations (HTMT). Following Henseler et al. (2015) recommendation, HTMT value less than 0.9 is considered a good indicator of discriminant validity. The results shown in Table 10 indicate that discriminant validity for most constructs is well established - except the constructs strategic planning, leadership, information analysis and process management show HTMT value slightly larger than 0.9. Examining the confidence interval which is conducted using the bootstrapping procedure implemented in PLS-SEM with 500 resamples we find that the empirical 95% confidence interval does not

contain the value 1 indicating sufficient discriminant validity according to Henseler et al. (2015).

**Table 10: Discriminant validity check using HTMT**

Construct	LD	SP	CF	PM	HRM	IA	ENS	SS	ECS	CMT	CUS	EMP
LD	-											
SP	0.946	-										
CF	0.830	0.880	-									
PM	0.812	0.918	0.772	-								
HRM	0.786	0.915	0.677	0.915	-							
IA	0.810	0.918	0.865	0.944	0.867	-						
ENS	0.829	0.853	0.811	0.839	0.734	0.807	-					
SS	0.872	0.847	0.796	0.748	0.847	0.752	0.780	-				
ECS	0.758	0.779	0.807	0.803	0.712	0.803	0.854	0.740	-			
CMT	0.865	0.844	0.840	0.803	0.799	0.763	0.739	0.907	0.846	-		
CUS	0.806	0.740	0.873	0.727	0.616	0.777	0.663	0.858	0.779	0.857	-	
EMP	0.845	0.916	0.691	0.781	0.931	0.751	0.784	0.883	0.667	0.860	0.663	-

The multicollinearity factor was measured by using the variance inflation factor (VIF). Table 11 illustrates the VIF values and outer weight of first order constructs for TQM. The result shows that VIF value for all factors are below the threshold 10 (Brien, 2007) , which indicates non-existence of multicollinearity.

**Table 11: Assessment of formative constructs.**

Second -order construct	First -order construct	Outer weights	T- value	VIF
TQM	Leadership	0.162	11.815	3.364
	Strategic Planning	0.187	15.478	6.951
	Customer Focus	0.216	7.849	3.410
	Process Management	0.174	9.388	4.826
	Human Resource Management	0.216	8.718	4.365
	Information and analysis	0.162	9.874	4.395

#### 4.2.4 Assessment of the structural model

After the reflective measurement model has been confirmed, the next step is to analyze a structural model. Assessment of structural model results helps to confirm our theory. Structural model (also called inner model) represents the relation and hypotheses between the constructs. Structural assessment mainly aims to determine four key elements; coefficient of determination ( $R^2$ ), Path coefficients ( $\beta$  value) and T-statistic values, effect size ( $f^2$ ), and the predictive relevance of the model ( $Q^2$ ). The first step in structural model assessment is to examine the coefficient of determination ( $R^2$ ), it represents how much of variation in an endogenous construct is explained by all of the predictors contact to it.  $R^2$  value of 0.75, 0.50 or 0.25 are considered as high, moderate or weak, respectively (Hair et al., 2011). As presented in Table 12,  $R^2$  value for CS is (0.841) which is described as high, this means that 84.1% of the variance in the CS is explained by two predictors TQM and CSR. In addition to evaluating  $R^2$  value, it is important to examine Stone-Geisser  $Q^2$  criteria. This measure describes the model's predictive relevance, it represents how well the path model can predict the endogenous variable. The value of  $Q^2$  is determined by the blindfolding procedure. As recommended by Hair et al. (2011),  $Q^2$  value above zero for reflective endogenous construct indicates that exogenous constructs have predictive relevance for this particular construct. Table 12 represents the  $Q^2$  values are 0.397 and 0.395 for CS and CSR, respectively, which indicate the model has predictive relevance. In addition to  $R^2$  and  $Q^2$  values, it is also important to calculate the effect size  $f^2$ . The  $f^2$  is a measure of the impact of each exogenous latent variable on endogenous construct, it helps to analyze how much a predictor explains the endogenous construct. Cohen (1988) stated that  $f^2$  values of 0.02, 0.15 and 0.35, respectively, imply small, medium and large effect of predictor

variable. As reported in Table 12, the TQM and CSR for explaining the endogenous variable CS have  $f^2$  value of 0.306 and 0.310, respectively. Hence, the effect size of TQM and CSR on CS are large.

**Table 12: Results of  $R^2$ ,  $f^2$  and  $Q^2$  value.**

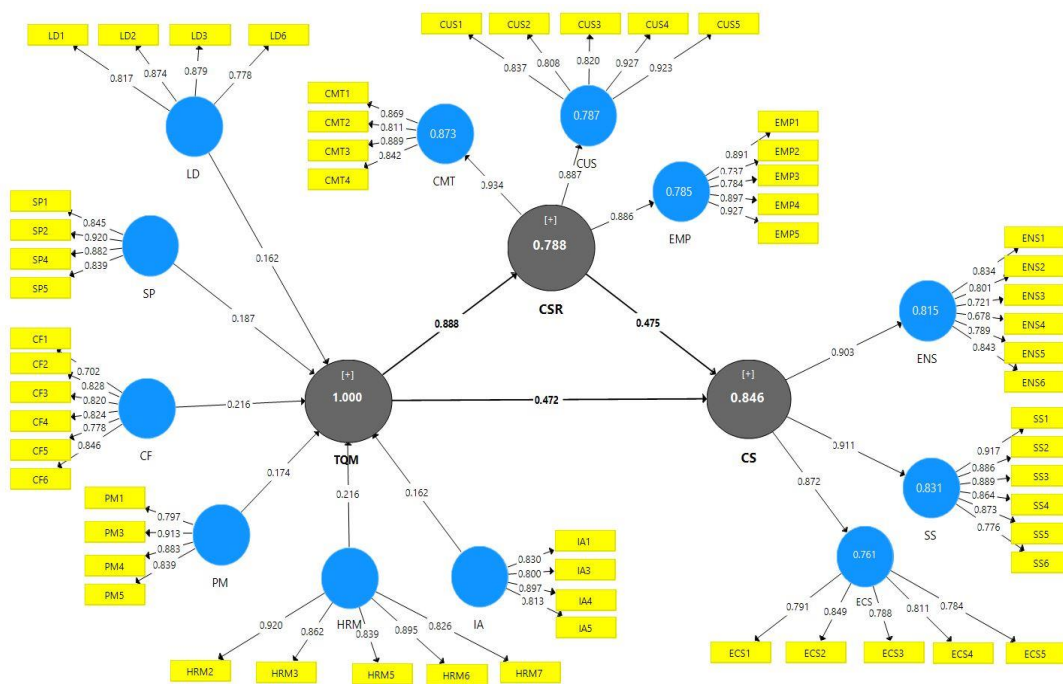
Construct	$R^2$ adj	$Q^2$	$f^2$ CS
TQM	-	-	0.306(large)
CS	0.841(high)	0.397	-
CSR	0.785(high)	0.395	0.310(large)

#### 4.2.4.1 Testing of hypotheses

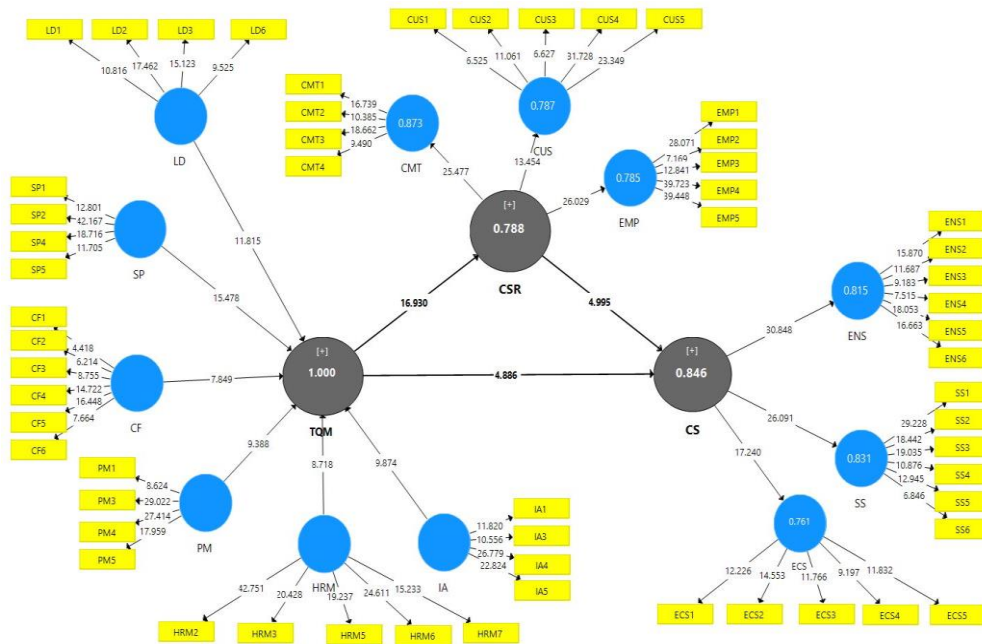
The current study aims to explore the effect of TQM practices on CS three dimensions through mediating role of CSR. It is important to determine the strength of the relationships between the latent variables through observing the standardized path coefficient ( $\beta$ -values) by running PLS -algorithm with the default setting of 300 iterations and factor analysis as weighting scheme.  $\beta$  -values should be between  $-1$  and  $+1$ , as the values close to  $+1$  the relationships become stronger (same for negative values) (Hair et al., 2016). Figure 5 displays the results of PLS -algorithm for research model. In order to test the hypotheses and verify the significance of the relationships between the constructs, t-value was determined by running bootstring procedure with 500 subsamples as the default setting. As recommended by Hair et al. (2016), the relationship is considered significant if T -value is equal or more than 1.96 at significance level of 5% (two-tailed level of significance) and p-value is below 0.05. The results of bootstrapping are illustrated in Figure 6. T -values,  $\beta$  -values and P-values of the structural model are given in Table 13. The results revealed that TQM practices have a significant positive impact on CS with ( $\beta = 0.893$ ,  $t = 17.740$ ,  $P\text{-value} = 0.00$ ). Therefore, H1 is supported. This results

complies with study of Abbas (2019) which also found a significant effect of TQM and all three dimensions of sustainable performance in manufacturing firms at Pakistan. Investigating the impact of TQM

practices on CSR activities have found a significant positive relationship ( $\beta = 0.888$ ,  $t = 16.930$ ,  $P\text{-value} = 0.00$ ), hence H2 is supported. These results support Makhdoom and Anjum (2016) study which found a positive relationship between TQM and CSR. Moreover, a significant relationship was found between CSR and CS ( $\beta = 0.475$ ,  $t = 4.995$ ,  $P\text{-value} = 0.00$ ), hence H3 is accepted. It is similar to Shahzad et al. (2019) finding which demonstrated that CSR has a positive effect on sustainable performance in manufacturing company in Asia.



**Figure 5: The results of PLS -algorithm for research model**



**Figure 6: PLS Bootstrapping (T-values) for the research model.**

### Mediating test

In current study, CSR mediates the relationships between TQM and CS. Thus, H4 is proposed. To test the hypotheses and investigate the mediation effect, Preacher and Hayes (2008)'s recommendation was followed (direct and indirect effect). The direct effect of TQM on CS without including the mediator variable indicates a significant value with ( $\beta = 0.893$ ,  $t = 17.740$ ,  $P\text{-value} = 0.00$ ). With addition of CSR as a mediator reduced the TQM effect on CS to ( $\beta = 0.472$ ,  $t = 4.886$ ,  $P\text{-value} = 0.000$ ). This reduction indicates that the mediator absorbs apportion of TQM effect on CS. The assessment of indirect effect  $TQM \rightarrow CSR \rightarrow CS$  indicates a significant impact with ( $\beta = 0.422$ ,  $t = 4.539$ ,  $P\text{-value} = 0.000$ ), to determine the degree of indirect effect, Hair et al. (2016) recommended to calculate the value of variance accounted for (VAF), which estimates the size of indirect effect over total effect. VAF value is equal 47.203% (larger than 20 and less than 80) which represents partial mediation (Hair et al., 2016). The result

indicates that CSR partially mediates the relationship between TQM and CS, therefore H4 is supported.

**Table 13: Hypothesis testing results.**

Path	Hypothesis	$\beta$ -value	Std. Error	T- value	P-value	Decision
TQM→CS	H1	0.893	0.050	17.740	0.000	Supported
TQM→CSR	H2	0.888	0.052	16.930	0.000	Supported
CSR→CS	H3	0.475	0.095	4.995	0.000	Supported
TQM→CS	Mediation	0.472	0.097	4.886	0.000	Supported
TQM→CSR →CS (indirect)	H4	0.422	0.093	4.539	0.000	

## **Chapter Five**

### **Framework development**

#### **5.1 Chapter overview**

This chapter discusses the model developed based on the results of the analysis. The framework provides decision makers with a set of guidelines on how to integrate TQM practices and CSR activities in their strategy and operational process to achieve organizational sustainable development objectives.

#### **5.2 Model development**

In developing countries like Palestine, where the concept of sustainability and green performance are still at an introductory level. Particularly, manufacturing sector still requires more attention to improve the sustainability development. This needs support from many stakeholders and decision makers such as government (represented in Palestinian ministry of national economy and federation for industries). The government plays a substantial role in this area, since it has the force to make it compulsory for manufacturing industry to follow environmentally-friendly policies and green practices. Management of a manufacturing firm can achieve sustainable development through capitalizing on TQM and CSR. CS requires a comprehensive view and integrated approaches through all organization activities (Bastas and Liyanage, 2019). The framework introduced in Figure 7 offer several implications for decision maker to drive sustainable development. The model was constructed on the basis of process approaches which incorporates the Deming's Plane-Do-Check-Act (PDCA) cycle. A process approach enables an organization to obtain

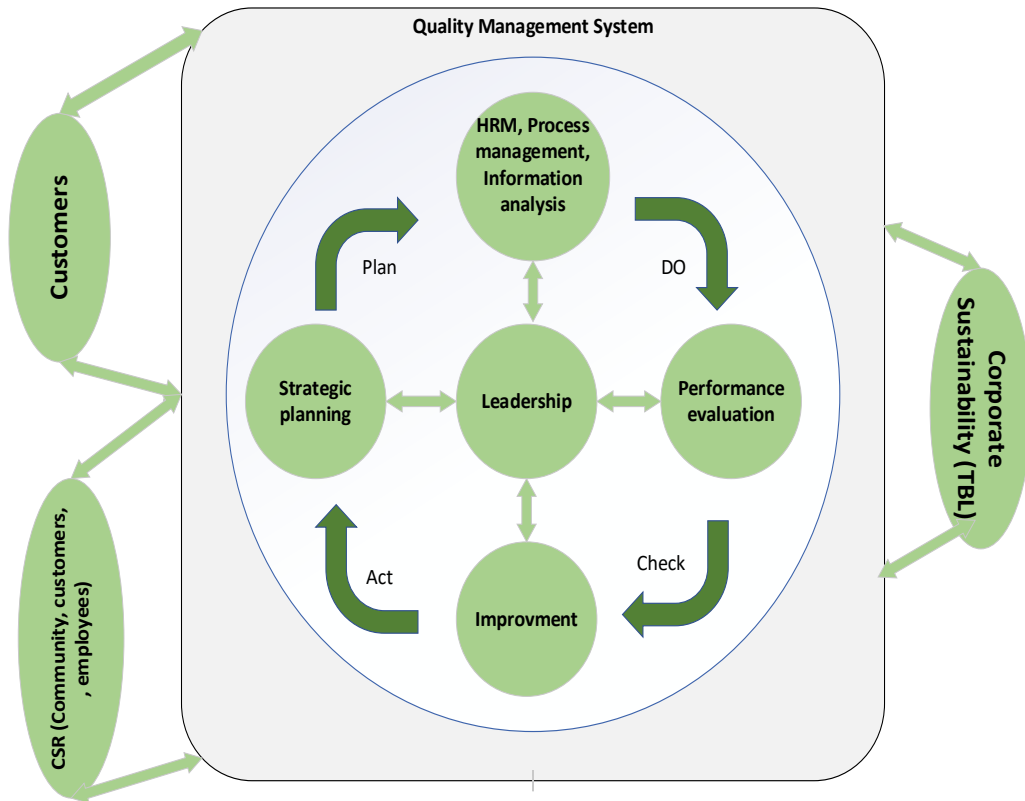
consistent results through management of key activities and their interactions as process by identify responsibilities, objectives, resource and interface (ISO, 2015). The continuous improvement framework structure of Deming's (PDCA), enable the organization to better adapt to changing stakeholder needs, and has appositve relationship with sustainable development (Asif and Searcy, 2014; Kuei and Lu, 2013). The PDCA philosohpy provided a platform for continuous improvement, action deploymnet, monitoring and control on the basis of TQM and CSR, contriputing to organizational performance and sustainability development, as conseptualizaed in Figure 7. Initially, CS (social, environmental and economic aspects), CSR and stakeholders' requirements should be integrated and aligned with corporate strategy (Bernal-conesa et al., 2016). Then, leaderships play as a platform to drive sustainable development. They should have commitment and support to sustainable development through establishing a clear mission, vision policy and long-term objectives, they also ensure providing adequate recourses and training toward sustainable performance (Ahmed et al., 2020). However, the findings demonstrated that the customer focus was the most influential factor of TQM practices. This result is consistent with study of Singh et al. (2018) which illustrated that customer focus was the key factor for improving organizational performance. Since the customer is considered as the core factor for development process, organizations should focus on identifying the sustainability requirements and needs of their customers. Furthermore, the sustainability needs of the customers should be aligned with organizational strategy and reflected on product and process design to guarantee sustainable customer satisfaction. Another important factor is HRM, which is also one of the most preferable TQM practice and main assets of the company. The company should ensure providing safe and

healthy working condition to reduce work accidents and risks. In addition to that, they should focus on training and developing the awareness of their employees about environmental issues (Zaidi and Ahmad, 2020). Process management is then undertaken to planning and design the products in line with sustainability objectives, environmental performance and stakeholders' requirements. The management should adopt automated system to reduce human error and ensure constancy, establishing quality control and monitoring procedure to enhance system efficiency and effectiveness for sustainable development (Abbas, 2020). Finally, for last practice which has the minimum level of influence, information and knowledge management. An accurate and reliable data should be deployed in decision making and sustainability improvement actions. Moreover, the key indicators for organizational sustainability development are identified, monitored, and controlled (Yusr et al., 2017).

Sustainable development alongside its three pillars (social, environmental and economic), should be aligned and integrated with business strategy and operational process. Social sustainability was found to have the highest priority. Social sustainability concerned with manufacturing company performance accordance to social system, and focuses on their impact on external and internal stakeholder relation. Social performance elements include; increased concerned about occupational health and safety management system, improving community health and infection control procedure, committing to the code of ethic, minimizing the negative impact on the local community, and providing more job opportunities. Followed by environmental dimension, however, environmental sustainability pillar has the lowest performance level. As mentioned earlier, because of complex and unique situation in Palestine due to political issue, it's becoming challenging to adapt and implement green practices in the

manufacturing sector. Moreover, the concept of green performance is still emerging and needs for more attention. In spite of that, the Palestinian organizations show to have high level of environmental performance. So, to enhance manufacturing firm's green performance, they should consider the impact of their operations on natural environment. Environmental performance can be assessed by following criteria; energy saving, use renewable energy such as solar energy, reduced natural resources consumption. Moreover, purchased environmentally-friendly material, minimizing using toxic substance, handling waste management, reduced pollution and emission, enhancement of the durability and recyclability of the products and adopt electronic system instead of paper work. On the economic side, the manufacturing firms should ensure continual growth and profit, but without harming the environment and society. One of the main goals for a manufacturing company is to attain long-term survival, in order to achieve this goal, they should focus on both financial and non-financial performance (environmental and social aspects). The economic performance is represented in long term profit, increased market share, reduce cost of energy consumption, operational cost reduction and disposal and waste treatment. Moreover, it enhances firm's reputation and image. The company should integrate social responsibility practices into business management. Furthermore, sustainability needs and requirements for stakeholders (community, customers and employees) should be identified and aligned with company strategy. The results show that the social activities toward community have the most preferable dimension. To gain best results for sustainable performance, the organization should actively participate in CSR activities such as ensuring wellbeing of the society through financial and non-financial support and creates more job opportunities. Regarding to customer, guarantee sustainable satisfied

customer, effective response to complaints, provide accurate information for sustainable development and respect customers rights. Focus on employees' responsibility by ensuring healthy and safe working condition, empower and build employees competence to contribute for sustainable development objectives. Additionally, it offers valuable salary, and provides benefits to enhance the quality of their lives. Finally, sustainable performance evaluation should be implemented to make sure that the results are complying with company sustainability plan. If there is any deviation from plan, corrective actions should be taken to achieve organizational goals.



**Figure 7: TQM best practices framework to support sustainable performance**

## **Chapter Six**

### **Discussion and conclusions**

#### **6.1 Chapter overview**

This chapter presents the discussion of the research results and findings of analysis for the data collected via questionnaire and interview. The first section discusses TQM practices, CSR activities and CS alongside its three dimensions (social, environmental and economic) based on the results of descriptive statistics, hypotheses testing and interviews. The second section summarizes the thesis results through conclusions.

#### **6.2 Discussion**

The current study investigated the impact of TQM on CS along with mediating effect of CSR in manufacturing companies in Palestine, to give more insight on the role of TQM practices to improve sustainable performance in manufacturing sector, this research explored to what extent the TQM was implemented, which can help to promote green performance. The finding revealed that TQM were highly implemented among employees, which were similar to Zaidi and Ahmad (2020) finding in manufacturing company. This refers to most of sampled companies have implemented ISO 9001 quality management system with percent reach to (40.3%). This indicates that manufacturing organizations effectively implementing TQM practices to enhance sustainable development. Based on the results, TQM has a significant and positive impact on CS three dimensions (social, environmental and economic). This finding is consistent with Abbas (2019) study which found significant positive relation between TQM practices and CS three dimensions. Therefore, H1 is supported. The basis of this positive relationship is that TQM consists of

group practices that aim to achieve customer satisfaction through continuous improvement. TQM provides the base for adopting sustainability in all aspects, since the main purpose of TQM system is to enhance system efficiency through efficient resource utilization, eliminating defect, avoiding unnecessary activities and integrating all organization functions (Pereira-moliner et al., 2012). Which in turn reduces the time and operating cost and improves customer satisfaction. Moreover, it saves environment and natural resources. Leading to the environmental sustainability. As a result, it improves firm's financial performance which impacts economic sustainability. Nowadays, the customer becomes more aware and prefers the company that takes into consideration the impact of their operations on natural environment, which reflect their image and customer becomes more loyalty (Yuan and Xiang, 2018). The TQM and environmental management share similar long- term goals, such as reduction in resource usage, reducing waste and promoting customer satisfaction. The most important step to achieve these long-term goals is to align organizational business strategy with environmental sustainability. Customer focus and HRM were found to be the most influential factors of TQM practices, followed by strategic planning, process management. Whereas the least influential TQM practices were leadership and information analysis. Customer focus was also the most implemented TQM practices. Singh et al. (2018) also revealed in their study that customer focus had a significant effect on organization performance. Since the customer is considered as a key driver for TQM implementation; regularly analysis for customer satisfaction feedback for continuous improvement, properly resolve customer complaints, focusing on customer- oriented strategies (Zaidi and Ahmad, 2020). Moreover, design and development the product based on customers' requirements. Even customer focus was the

most preferable practice, few manufacturing companies in Palestine give attention to the need and requirements of the customers. Most of companies design and produce product according to the specification determined by the market, so it is market-driven more than customer-oriented. In this regard, Herzallah et al. (2014) confirmed that in order to achieve better performance, the manager should identify the customers' requirements and reduce their complaints. Therefore, the Palestinian manufacturing firms should keep in touch with their customers and get more information about their demand for product quality development. The results also revealed that HRM is one of the main dynamic assets of organization. This results is consist with earlier studies of Zaidi and Ahmad (2020), Talapatra et al. (2019) which have illustrated human resources practices were positively related to operational performance. Enhance employee's competence and retention through effective training, good health and safety condition, recognition and performance appraisal. Satisfied employees increase the productivity and quality level, which in turn increase customers satisfaction, as a result enhance organizational performance. However, the results displayed that HRM is the least implemented TQM practice. Therefore, the Palestinian organizations should invest intensively in human capital for sustainable development. The second preferable TQM practices was strategic planning. So, Proper formulation and implementation of quality policy, objectives and clear vision and mission, is important for improve operational performance. This result matches with Talapatra et al. (2019) study which found that strategic planning is a critical factor for successful TQM implementation. Moreover, organization strategy and plan focus on integration of all stakeholders needs and sustainability development objectives with quality management practices. The results also clarified that process management is one of the most important factor

in TQM for improving economic, environmental, and social performance (Isaksson, 2006). This finding is in agreement with several studies such as Zeng et al. (2015), Shafiq et al. (2017) and Adem and Viridi (2020). Process management involves activities such as adopting automated system, inspecting key process, establishing key performance indicators (KPIs) and monitoring performance. Furthermore, deploying practices and tools such as lean system and six sigma to enhance system efficiency through eliminating waste and minimizing process variation, which leads the organization to continuous improvement and have positive impact on sustainable performance. The effective process activities are defined and implemented according to customer needs. Particularly in manufacturing industry, the dynamic nature of the industry requires work process to be defined, managed, monitored and controlled properly (Sadikoglu and Olcay, 2014). The results revealed that leadership and information analysis were the least influential TQM practices. In term of LD, many studies emphasized on the vital role of top management for quality improvement (Zaidi and Ahmad, 2020; Ahmed et al., 2020). This result is aligned with finding of Herzallah et al. (2014) study which demonstrated that managers in Palestinian industrial firms plays an essential role for successful TQM programs. The top management are responsible for supplying sufficient resources, motivate and reinforce employees for quality improvement. Moreover, a recent study by Ahmed et al. (2020) revealed that top management relations is a key driver for quality relation like employee relation and training, and also has appositive impact on environmental, social and economic sustainability performance. The explanation for the minimum influence of LD is refer to the lack of top management commitment. The leader should have full commitment for improvement and maintaining the quality, also have active involvement in TQM

activities. The leadership is responsible for setting the strategic direction, clear vision and mission and make plan to accommodate to change. Moreover, a proper formulation and implementation of quality policy and objective is important for successful TQM implementation, this mean that the leader provide the right environment to enhance performance and productivity for employees (Zaidi and Ahmad., 2020). Despite the fact that previous studies stated that information and analysis had a significant influence on quality performance in manufacturing industry (Herzallah et al., 2014; Zeng et al., 2015; Yusr et al., 2017), it is noticeable that the finding indicated information and analysis was the least effective TQM practice. The previous studies emphasized on the importance of deploying effective information and reporting system, providing an accurate and timely information to the right department to help top management make the right decision and plan through using statistical tool and technique. The finding of this study indicated Palestinian manufacturing company still do not fully capitalize on quality data in decision-making. Therefore, the top management should depend more on statistical measurement, using reliable data and encourage information sharing culture in the organization to improve their quality performance. The results confirmed the importance of TQM implementation in manufacturing firms in Palestine. If Palestinian organizations want to gain sustainable performance, they need to enhance quality performance of their products. Moreover, the results indicated that social sustainability dimension has the highest propriety. It is very important to start taking social aspect in decision making process. Social sustainability has gained little attention compared to environmental and economic sustainability, as it is the least measurable dimension in the TBL model (Shahzad et al., 2019). Social sustainable organizations consider their operations' impact on social system where they operate. They also

focus on external and internal stakeholder relationship (Jamali, 2006). Organizational social performance indicators are represented in healthy and safe work conditions, customers' and employee's right, community engagement and public health. Social sustainable companies attain long-term survival through managing and embedded social sustainability in their operations and business strategy. Besides social sustainability, environmental aspect become the next priority. Implementing TQM practices can help organizations to boost their green performance such as least consumption of natural resources and energy, use of renewable energy, pollution reduction, recyclability, reduced toxic materials and become an environmentally-friendly organization (Ahmed et al., 2020).

Finally, TQM practices improve organization economic sustainability that because TQM practices enhance the firm operational performance, such as use resource efficiently, minimize defect rate, reduce cycle time, training and development, which improve employee's morale and commitment to the works, as a result enhancing organizations' productivity and quality level. Which in turn increases customer satisfaction and retention, satisfied customer increases the growth and profitability of the company (Singh et al., 2018). Moreover, TQM leads to minimize operational cost by reducing defects, rework and scrap. It also saves company money through reducing prevention, appraisal and failure costs. Since product with poor quality damages organization reputation, increases cost and wastage of resource and human effort (Tasleem et al., 2018). TQM approach helps firms to achieve excellence, sustainability and competitive advantage by focusing on continuous improvement and integration of all functions and processes (Bastas and Liyanage, 2018). We can conclude that CS should be integrated with quality management since it has great potential to improve firm in all TBL pillars. The results also indicated that TQM has a significant and positive effect on CSR. It confirms the finding of

Makhdoom and Anjum (2016) who identify a positive association between TQM and CSR. Hence, H2 is also supported. The positive relation illustrates that if accompany manages its TQM practices efficiently, it will boost its ability to contribute in social development activities. This result implies that the sampled plants are deploying the TQM system in efficient manner to promote CSR performance and strengthen their ability to participate in social development.

Analyzing the relationship between CSR and CS indicated that CSR has a significant and positive impact on CS. This positive result matches with Shahzad et al. (2019) who demonstrated that CSR is positively correlated with sustainable performance. This leads to support of H3. The positive result reflects that studied organizations are actively participating in CSR activities and experience very high sustainable performance. CSR-oriented organizations are enjoying with long term tangible and intangible benefit (Shahzad et al., 2019). CSR activities lead to increase customers and employees satisfaction which enhance firm's reputation (Asrar-ul-Haq et al., 2017). In addition, they improve organizational ability to attain competitive advantages, achieve sustainable development and improve financial performance (Awan et al., 2017). The finding demonstrated that the community dimension was the most priority of CSR activities. This is represented in many ways; opening communication channel with community, providing financial and non-financial support and creates job opportunities. Followed by customers and employees' dimensions, which almost have similar priority. Care about customer by seeking for customer satisfaction, effectively response to their complaints, respecting customer's right, putting fair prices for products. In the last, employees' accountability through providing safe and healthy working condition and encouraging them to develop their competences, provides a number of benefits to improve the quality of their lives, improve employee's morale and

commitment to the works, as a result enhancing organizations' productivity and quality level. It can be concluded that managers can strengthen their relation with stakeholders and improve organizational performance when social responsibility toward stakeholders are aligned with corporate strategy and embedded in operational routines and managerial design making. Analyzing the mediating role of CSR between TQM and CS demonstrated a positive and significant results, indicating partial mediating which mean TQM practices can directly as well as indirectly (through CSR) impact on CS. Therefore, H4 is supported. When implemented together, TQM and CSR have the potential to great sustainable competitive advantages (Wang et al., 2012). This means that TQM plays a vital role that helps companies to achieve a competitive advantages, sustainability and green performance by promoting the role of CSR practices.

### **6.3 Conclusions**

In this dynamic and modern business, manufacturing firms strive to achieve sustainable growth. The current study explored the impact of TQM on CS with its three dimensions and determined the role of CSR in mediation the relation between the two variables. The results indicated very high level of implementation for TQM, CSR and high level for CS. Based on MBNQA model four hypotheses were established and tested by (PLS-SEM). The results highlighted the significant impact of TQM on CS. Moreover, CSR plays as a partial mediator. The empirical results also indicated the importance of institutionalizing TQM practices in manufacturing firms in Palestine. Therefore, if the company implements TQM program in efficient manner with the help of CSR, it will boost CS. Furthermore, a framework was developed to help managers to establish integrated management system composed of TQM, CS and CSR. However, in order to achieve sustainable development objectives, it's essential to have commitment from government and top management.

## Chapter Seven

### Managerial implications and future studies

This chapter discusses the contribution of the thesis, limitations it faced, suggests recommendations, and includes the suggestions for future studies.

#### 7.1 Practical implications

The current study has number of practical and theoretical implications. From practical perspective many studies such as Abbas (2019), Mehralian et al. (2016) emphasized the important role of TQM practices in promoting organizational performance. The study spots the light on the importance of institutionalizing TQM practices (customer focus, HRM, strategic planning, process management, leadership, information and analysis) in manufacturing sector to achieve CS alongside the three pillars (social, environmental and economic). The study also highlights the important role of CSR activities in achieving CS objectives. However, CS and CSR concepts are still at introductory level especially in developing countries like Palestine and needs more attention from decision makers in the manufacturing sector. The analysis implies that effective implementation of TQM program and active participate in CSR activities have significant contribution to CS. Hence, in order to achieve CS objectives, the company should ensure implementation of TQM practices in efficient manner by adopting quality program such as MBNQ, ISO9001, etc. and consider the role of CSR. Finally, a framework was developed to help managers in manufacturing sector to promote sustainability performance through integrating and aligning CS and CSR in their strategy and routine operations and capitalizing in their resource like TQM. Therefore, the top management and leadership should have a strong commitment to effective implementation of TQM program and contribute to CSR to obtain

sustainable performance. Moreover, sustainable stakeholder's requirement should be integrated in organization operations and strategy.

## **7.2 Theoretical implications**

From the theoretical view point. The present research enriches the limited literature on TQM, CSR and CS in many ways. First, this study bridges the gap between TQM and CS three pillars particularly in manufacturing firms in Palestine. The study also supports the TQM advocate argument that effective implementation of TQM can significantly boost organizational performance. Secondly, this research validates the CS model on all TBL pillars and MBNQA model and examining the robustness of the conceptual model through (PLS-SEM) which has rarely been performed previously. Thirdly, the study expresses the role of CSR which partially mediates the relationship between TQM and CS, which is scarce in prior literatures.

## **7.3 Limitations and future research work**

Like other researches, the current study also has some limitations. First, the data for this research was collected under Covid-19 pandemic, which may reflect on the firm's performance especially economic aspect and has impacted on the generalizability of the results. So, it's recommended to investigate this model in different regions and industries. Secondly, the data was only generated from manufacturing firms in Palestine and ignored the service industry. It's recommended that the scope of the study should be expanded to include other sectors. Thirdly, the study focused on stakeholder relationship and accountability to these stakeholders (community, customers and employees), and ignored the role of supplier, which plays important role. Therefore, in future studies the researchers can integrate supply chain to further explore this factor. Fourth, the data was only obtained from quality managers, general and production managers,

and didn't consider the operational staff which their opinion can give more information. So, in future, studies should extend the scope of respondents. Finally, in this dynamic and modern business, the technological revolution has increased the importance of efficient utilization of knowledge. In future studies, we suggest investigating the relationship between knowledge management and CS.

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## Appendices

### Appendix A



An-Najah National University  
Faculty of Graduate Studies  
Engineering Management Program

#### **Questionnaire about Impact of total quality management on corporate sustainability through the mediating role of corporate social responsibility in the manufacturing sector**

Introduction: First of all, thank you for finding time for filling this questionnaire, and we ask God to fulfill your hopes and aspirations. I am a student, Samah Hassis, master degree in Engineering Management from An-Najah National University. My aim is to conduct a scientific research to complete the thesis requirements. This questionnaire is designed to help complete this research and it will be used for the scientific purpose only.

The questionnaire consists of four main sections:

Section One: General information about respondents

Section Two: Total Quality Management Practices

Section three: Corporate sustainability

Section four: social responsibility as a mediator of the relationship

The expected time to complete the questionnaire is 15 minutes.

Your participation in this survey by answering the following questionnaire is totally appreciated, please note that all the information in this survey will only be used for academic research, and all information provided will be treated as confidence

**Section one: Demographic Information**

Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
Your organization sector	<input type="checkbox"/> Chemical industry <input type="checkbox"/> Food industry <input type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Other, specify please _____
Your organization type	<input type="checkbox"/> family business <input type="checkbox"/> public joint stock <input type="checkbox"/> private joint stock <input type="checkbox"/> Other, specify please _____
Number of employees in the organization	<input type="checkbox"/> 10-19 <input type="checkbox"/> 20-49 <input type="checkbox"/> 50-99 <input type="checkbox"/> 100-249 <input type="checkbox"/> More than 250
Geographic location	<input type="checkbox"/> Ramallah <input type="checkbox"/> Nablus <input type="checkbox"/> Tulkarm <input type="checkbox"/> Jenin <input type="checkbox"/> Bethlehem <input type="checkbox"/> Jerusalem <input type="checkbox"/> Hebron <input type="checkbox"/> Qalqilya <input type="checkbox"/> Salfit <input type="checkbox"/> Jericho <input type="checkbox"/> Tubas
Job position	<input type="checkbox"/> General manager/CEO <input type="checkbox"/> Quality manager <input type="checkbox"/> Administrative manager <input type="checkbox"/> <input type="checkbox"/> Production manager <input type="checkbox"/> Other, specify please
Your education degree	<input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor <input type="checkbox"/> Master's degree <input type="checkbox"/> PhD
Years of experience in your organization	<input type="checkbox"/> Less than 2 years <input type="checkbox"/> 2-5 years <input type="checkbox"/> 6-10 years <input type="checkbox"/> Greater than 15 years <input type="checkbox"/> 11-15 years
The quality system of your company (you can choice more than one option)	<input type="checkbox"/> ISO9001 <input type="checkbox"/> ISO14001 <input type="checkbox"/> ISO 45001 <input type="checkbox"/> ISO22000 <input type="checkbox"/> HACCP <input type="checkbox"/> GMP <input type="checkbox"/> Other, specify please..... <input type="checkbox"/> None
Where are your company market	<input type="checkbox"/> Local market <input type="checkbox"/> Regional market

their products (you can choice more than one option)	<input type="checkbox"/> Global market
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Section two: TQM practices					
Part one: Leadership	Strongly Agree	Agree	Neutral	Disagree	strongly disagree
Top management is committed to the culture of change					
Top management actively participates in quality management and improvement process					
Top management allocate sufficient resources for products quality improvement					
Top management strongly encourage the employees to share their views					
Top management regularly share the organization vision and mission with employees					
Top management regularly held meetings discusses and reviews quality-related issues					
Part two: Strategic planning	Strongly Agree	Agree	Neutral	Disagree	strongly disagree
The company has a clear vision and mission statements which are supported by all employees					
The company regularly sets and reviews short and long-term goals					
The management provides					

adequate resources and support to achieve short and long-term objectives					
My company sets a policies and plans consider employees', customers', and other all stakeholders' needs					
The strategies and plans of my organization are focused on quality improvement					
<b>Part three: Customer focus</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
The company designs products by considering the customers' requirements					
Customers' satisfaction feedbacks are taken regularly by company					
The manager supports the employee's initiative to improve customers' satisfaction					
The company conducts market study regularly to determine customer needs and expectation					
My organization resolves customers complaints and have effective mechanism for it					
My organization keeps a strong relationship with customers by providing easy channel for communication					
<b>Part four: Process management</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>

Most of the processes in our organization are automated and minimizes human error chances					
We have the latest technology and equipment to serve our customers more effectively and efficiently					
Our system allows us to inspect and track key processes that are critical to the organization					
We regularly evaluate and improve our business processes to ensure quality					
Our organization establishes Key Performance Indicators (KPIs) for monitoring purpose					
<b>Part five: HRM</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
The management gives high value to recruitment and selection standards					
My organization regularly arranges training and development sessions for its employees					
We have effective work recognition and reward system to motivate the employees					
The management of my company regularly takes employees' views and consider them to improve product quality					
Our organization regularly measures employee's satisfaction					
Our organization maintains a working environment that contributes to the health, safety and well-being of all employees					
All employees believe that quality is their responsibility					
<b>Part six: Information and analysis</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
We have effective information and reporting system for all products					

Workers and managers can easily return information about products					
The top management uses quality data to make decisions and plans					
All departments coordinate with each other to implement and monitor quality improvement programs					
Our organization uses charts, graphs and other statistical tools and techniques to monitor quality					
<b>Section three: Corporate sustainability</b>					
<b>Part one: Environmental sustainability</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
Increased the rate of purchase of environmentally friendly material					
Direct and indirect toxic materials are reduced					
Increased use of recycable materials and reduce waste					
Increased use of renewable energy such as solar energy					
Reduced the consumption rate of energy and resources during production processes					
Reduced the risk of environmental accidents such as waste leakage and pollution					
<b>Part two: Social sustainability</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
Increased concern about occupational health and safety management system					
Increased attention in employees' rights and interests					
Improving community health and safety, and infection control.					
Reducing the negative impact of the plant's activities on the local community					

Improving the products quality and committing to the code of ethics					
Developing economic activities in the community and providing more job opportunities					
<b>Part three: Economic sustainability</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
Growth profits due to reduced energy and material consumption					
Increased market share of the factory and enhance its reputation					
decreased cost of energy consumption					
increased in the quality of the products provided while saving the operational costs					
Reduced costs of waste treatment and disposal					
<b>Section four: Corporate social responsibility</b>					
<b>Part one: CSR to community</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
The factory management have an open communication channel with the community					
The factory management creates job opportunities for the specialists					
My factory provides financial and non-financial support to educational institutions					
The factory provides financial support to people in need					
<b>Part two: CSR to customers</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
My organization endeavors for Customer satisfaction through continuous improvement					
We provide full and accurate information about our products to our customers					

Our plant puts fair prices for products					
Our company is effectively response to the complaints of our customers					
Our company respects consumer rights beyond the legal requirements					
<b>Part three: CSR to employees</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>strongly disagree</b>
My plant provides a safe and healthy working environment to all its employees					
Our plant supports employees willing to acquire additional education.					
My plant offers a valuable salary to its employees					
Our plant provides a number of benefits to improve the quality of employees' lives					
Our plant encourages the employees to develop their skills and careers.					
The factory hires the people with special needs					

Do you have any comments or suggestions?

.....

## Appendix B



جامعة النجاح الوطنية – نابلس

كلية الدراسات العليا

ماجستير إدارة هندسية

عنوان الأطروحة:

أثر إدارة الجودة الشاملة على استدامة الشركات من خلال الدور الوسيط للمسؤولية الاجتماعية للشركات في قطاع التصنيع

**Impact of total quality management on corporate sustainability through the mediating role of corporate social responsibility in the manufacturing sector**

مقدمة: في البداية نشكركم لتخصيص جزء من وقتكم لإتمام هذا الاستبيان ونرجو من الله ان يحقق امالكم وطموحاتكم. انا الطالبة سماح هصيص ماجستير إدارة هندسية من جامعة النجاح الوطنية هدفي القيام ببحث علمي لاستكمال متطلبات الأطروحة وصمم هذا الاستبيان للمساعدة لإتمام هذا البحث وسوف يستخدم للغرض العلمي فقط.

يتكون الاستبيان من أربعة اقسام رئيسية:

القسم الأول: معلومات عامة تخص القارئ/القارئة

القسم الثاني: ممارسات إدارة الجودة الشاملة

القسم الثالث: الاداء المستدام

القسم الرابع: المسؤولية الاجتماعية كوسيط للعلاقة

الزمن المتوقع لإتمام الاستبيان هو 15 دقيقة.

الرجاء التفضل بقراءة جميع فقرات الاستبيان بدقة، ووضع الدرجة التي تراها مناسبة امام كل فقرة بموضوعية وحيادية. علما بان كافة المعلومات سوف تكون سرية ولن تستخدم الا لأغراض البحث العلمي.

القسم الأول: ارجو وضع علامة (✓) في المكان المناسب

الجنس	<input type="checkbox"/> أنثى <input type="checkbox"/> ذكر
يصنف المصنع حسب قطاع الصناعات	<input type="checkbox"/> كيماويات ذلك, حددها رجاء <input type="checkbox"/> أغذية <input type="checkbox"/> معادن <input type="checkbox"/> بلاستيك <input type="checkbox"/> غير
يصنف المصنع حسب نوع الشركات	<input type="checkbox"/> شركة عائلية <input type="checkbox"/> مساهمة عامة <input type="checkbox"/> مساهمة خاصة <input type="checkbox"/> غير ذلك, حدد رجاء
عدد العاملين في المصنع	<input type="checkbox"/> 19-10 <input type="checkbox"/> 20-49 <input type="checkbox"/> 50-99 <input type="checkbox"/> 100-249 <input type="checkbox"/> 250 فما فوق
الموقع الجغرافي	<input type="checkbox"/> رام الله <input type="checkbox"/> نابلس <input type="checkbox"/> طولكرم <input type="checkbox"/> جنين <input type="checkbox"/> بيت لحم <input type="checkbox"/> القدس <input type="checkbox"/> الخليل <input type="checkbox"/> قلقيلية <input type="checkbox"/> سلفيت <input type="checkbox"/> اريحا <input type="checkbox"/> طوباس <input type="checkbox"/> والاغوار
الموقع الوظيفي	<input type="checkbox"/> المدير العام/المدير التنفيذي <input type="checkbox"/> مدير الجودة <input type="checkbox"/> مدير الإنتاج <input type="checkbox"/> المدير الإداري <input type="checkbox"/> غير ذلك (.....)
الدرجة العلمية	<input type="checkbox"/> دبلوم <input type="checkbox"/> بكالوريوس <input type="checkbox"/> ماجستير <input type="checkbox"/> دكتوراه
انت تعمل في هذه المؤسسة منذ	<input type="checkbox"/> أقل من سنتين <input type="checkbox"/> 2-5 سنوات <input type="checkbox"/> 6-10 سنوات <input type="checkbox"/> 11-15 سنة <input type="checkbox"/> 15 سنة فأكثر
نظام الجودة المطبق في المصنع (يمكن اختيار أكثر من جواب)	<input type="checkbox"/> ISO 9001 <input type="checkbox"/> ISO14001 <input type="checkbox"/> ISO 45001 <input type="checkbox"/> ISO22000 <input type="checkbox"/> HACCP <input type="checkbox"/> GMP <input type="checkbox"/> غير ذلك, حدد رجاء <input type="checkbox"/> لا يوجد
أين يتم تسويق منتجات المصنع (يمكن اختيار أكثر من جواب)	<input type="checkbox"/> سوق محلي <input type="checkbox"/> سوق إقليمي <input type="checkbox"/> سوق عالمي

القسم الثاني: ممارسات إدارة الجودة الشاملة						
الرقم	الجزء الأول: القيادة ودعم الإدارة العليا	أوافق بشدة	أوافق	لا أعلم	أعارض	أعارض بشدة
1. 1	تلتزم الإدارة العليا بثقافة التغيير					
2.	تلتزم الإدارة العليا بسياسة تطبيق مبادئ الجودة والتحسين المستمر					
3.	تخصص الإدارة العليا موارد كافية لتحسين جودة المنتجات					
4.	تشجع الإدارة العليا موظفيها على مشاركة آرائهم وأفكارهم الإبداعية					
5.	تشارك الإدارة العليا بانتظام استراتيجيات ورؤية المنظمة مع موظفيها					
6.	تعقد الإدارة العليا بانتظام اجتماعات لمناقشة ومراجعة القضايا المتعلقة بالجودة					
الرقم	الجزء الثاني: التخطيط الاستراتيجي	أوافق بشدة	أوافق	لا أعلم	أعارض	أعارض بشدة
7.	يمتلك المصنع رؤية ومهمة واضحة يدعمها جميع الموظفين					
8.	تضع الشركة وتراجع بانتظام الأهداف القصيرة وطويلة المدى					
9.	توفر الإدارة الموارد الكافية والدعم لتحقيق الأهداف قصيرة وطويلة الأجل					
10.	يضع المصنع السياسات والخطط التي تأخذ بعين الاعتبار احتياجات الموظفين والعملاء وجميع أصحاب العلاقة					
11.	تركز استراتيجيات وخطط المصنع على تحسين الجودة					
الرقم	الجزء الثالث: التركيز على الزبائن	أوافق بشدة	أوافق	لا أعلم	أعارض	أعارض بشدة
12.	يصمم المصنع المنتجات بناء على احتياجات الزبائن					
13.	يقوم المصنع بانتظام بأخذ تغذية راجعة من الزبائن لقياس مدى رضاهم					
14.	يدعم المدير مبادرة الموظفين لتحسين رضا العملاء					
15.	يتم إجراء دراسة للسوق بانتظام لتحديد احتياجات العملاء وتوقعاتهم					
16.	يوجد في المصنع نظام شكوي فعال لمعالجة شكوي الزبائن					
17.	يوفر المصنع قنوات اتصال فعالة للمحافظة على علاقة قوية مع الزبائن					
الرقم	الجزء الرابع: إدارة العمليات	أوافق بشدة	أوافق	لا أعلم	أعارض	أعارض بشدة
18.	يقوم المصنع بتقديم عمليات مؤتمتة وتقلل من الأخطاء البشرية					
19.	يوفر المصنع أحدث التكنولوجيا والتقنيات لخدمة زبائنه بشكل فعال					
20.	تعمل إدارة المصنع على فحص ومتابعة العمليات الحرجة المتعلقة بجودة الخدمة					
21.	تقوم إدارة المصنع بانتظام بعملية تقييم وتحسين عملياتها					

22.	تقوم إدارة المصنع بوضع مؤشرات لقياس الأداء (KPIs) بهدف مراقبة العمليات				
الرقم	الجزء الخامس: إدارة الموارد البشرية	أوافق بشدة	أوافق	لا أعلم	أعارض بشدة
23.	تعطي الإدارة أهمية عالية لعملية التعيين والتوظيف				
24.	يتم عقد دورات تدريب وتطوير للموظفين بشكل منتظم				
25.	يوجد لدى المصنع نظام حوافز ومكافآت فعال				
26.	تأخذ إدارة المصنع آراء الموظفين لتحسين جودة المنتج				
27.	تقوم إدارة المصنع بانتظام بقياس مدى رضا الموظفين				
28.	يوفر المصنع بيئة عمل تساهم في صحة وسلامة ورفاهية جميع الموظفين				
29.	تعمل إدارة المصنع على ترسيخ مفهوم الجودة والتحسين المستمر لدى الموظفين				
الرقم	الجزء السادس: المعلومات والتحليل	أوافق بشدة	أوافق	لا أعلم	أعارض بشدة
30.	يمتلك المصنع نظام معلومات وتقارير فعال لجميع المنتجات				
31.	يمتلك المدراء والموظفين القدرة على استرداد المعلومات المتعلقة بالمنتجات بسهولة				
32.	تستخدم الإدارة العليا بيانات الجودة (الشكاوى والعيوب وغير ذلك) لاتخاذ القرارات ووضع الخطط				
33.	يوجد تنسيق بين جميع اقسام المصنع لتنفيذ ومراقبة برامج تحسين الجودة				
34.	يستخدم المصنع الرسوم البيانية والبرامج الإحصائية لضبط الجودة				
القسم الثالث: الأداء المستدام					
الرقم	الجزء الأول: الأداء البيئي	أوافق بشدة	أوافق	لا أعلم	أعارض بشدة
35.	زيادة معدل شراء المواد الصديقة للبيئة				
36.	انخفاض المواد السامة المباشرة وغير مباشرة المستخدمة في المنتجات والمواد الخام				
37.	زيادة استخدام المواد القابلة لإعادة التدوير وتقليل كمية النفايات				
38.	زيادة معدل استهلاك الطاقة المتجددة مثل الطاقة الشمسية				
39.	انخفاض معدل استهلاك الطاقة والموارد مثل الماء والغاز والكهرباء في العمليات الانتاجية				
40.	تقليل مخاطر الحوادث البيئية مثل تسرب النفايات والتلوث				
الرقم	الجزء الثاني: الأداء الاجتماعي	أوافق بشدة	أوافق	لا أعلم	أعارض بشدة
41.	زيادة الاهتمام بصحة وسلامة الموظفين				
42.	زيادة الاهتمام بحقوق ومصالح الموظفين				

43.	تحسين صحة المجتمع وسلامته والحد من انتشار العدوى					
44.	تقليل التأثير السلبي لأنشطة المصنع على المجتمع المحلي					
45.	تحسين جودة المنتجات المقدمة والالتزام بميثاق اخلاق المهنة					
46.	تطوير الأنشطة الاقتصادية في المجتمع المحلي وتوفير المزيد من فرص العمل					
الرقم	الجزء الثالث: الأداء الاقتصادي	أوافق بشدة	أوافق	لا اعلم	اعارض بشدة	اعارض بشدة
47.	نمو في أرباح المصنع بشكل عام نتيجة تقليل استهلاك الطاقة والمواد					
48.	ارتفاع في الحصة السوقية للمصنع وتحسن سمعتها					
49.	خفض تكاليف استخدام الطاقة في المصنع					
50.	يوجد تزايد في جودة المنتجات المقدمة مع الحفاظ على التكاليف التشغيلية					
51.	خفض تكاليف المعالجة والتخلص من النفايات					
القسم الرابع: المسؤولية الاجتماعية						
الرقم	الجزء الأول: المجتمع	أوافق بشدة	أوافق	لا اعلم	اعارض بشدة	اعارض بشدة
52.	تقوم إدارة المصنع بالتواصل مع المجتمع المحلي بأسلوب منفتح وصريح					
53.	تقوم إدارة المصنع بخلق فرص عمل لأصحاب الاختصاص					
54.	يقدم المصنع الدعم المالي وغير المالي للمؤسسات التعليمية					
55.	يقدم المصنع الدعم المالي للناس المحتاجين					
الرقم	الجزء الثاني: الزبائن	أوافق بشدة	أوافق	لا اعلم	اعارض بشدة	اعارض بشدة
56.	تسعى إدارة المصنع الى رضا الزبائن من خلال تحسين جودة المنتجات					
57.	تقوم إدارة المصنع بتقديم المعلومات اللازمة والدقيقة للزبائن في الوقت المناسب					
58.	تضع إدارة المصنع أسعار عادلة مقابل المنتج					
59.	تتعامل إدارة المصنع مع الشكاوي بشكل فعال					
60.	تحتزم إدارة المصنع حقوق الزبائن بجانب الامتثال لمتطلباتهم القانونية					
الرقم	الجزء الثالث: الموظفون	أوافق بشدة	أوافق	لا اعلم	اعارض بشدة	اعارض بشدة
61.	تعمل إدارة المصنع على تحسين ظروف العمل الصحية للموظفين					
62.	تدعم إدارة المصنع الموظفين الراغبين في الحصول على تعليم إضافي.					

					تقوم إدارة المصنع بدفع رواتب تكافئهم بشكل عادل	63.
					تقدم إدارة المصنع عددًا من الفوائد والميزات مثل التأمين الصحي والضمان الاجتماعي وغير ذلك لتحسين جودة حياة الموظفين	64.
					تقوم إدارة المصنع بتطوير مهارات ومعرفة العاملين	65.
					تقوم إدارة المصنع بتوظيف ودمج ذوي الاحتياجات الخاصة	66.

هل يوجد أي ملاحظات أو اقتراحات أخرى تودون اضافتها ؟

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جامعة النجاح الوطنية

كلية الدراسات العليا

## أثر إدارة الجودة الشاملة على استدامة الشركات من خلال الدور الوسيط للمسؤولية الاجتماعية للشركات في قطاع التصنيع

إعداد

سماح هصيص

إشراف

د. محمد عثمان

د. يحيى صالح

قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية ، من

كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس - فلسطين

2021

ب

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### الملخص

في السنوات الأخيرة، بدأت شركات التصنيع في مواجهة وعي متزايد من مختلف أصحاب العلاقة حول التنمية المستدامة. يهدف هذا البحث الى دراسة مدى تأثير إدارة الجودة الشاملة (TQM) على استدامة الشركات (CS) من خلال الدور الوسيط للمسؤولية الاجتماعية للشركات (CSR). تم اعتماد ستة ممارسات لإدارة الجودة الشاملة بناء على نموذج جائزة مالکولم بالدريج الوطنية للجودة (MBNQA)، وتعتمد استدامة الشركات على ثلاثة ركائز: الركيزة البيئية والاجتماعية والاقتصادية، وتم قياس المسؤولية الاجتماعية للشركات من خلال معيار المجتمع والعملاء والموظفين. تم اعتماد نهج بحثي مختلط (كمي ونوعي) من خلال إجراء 12 مقابلة شبه مهيكلية مع مديري الجودة ومديري الإنتاج والرؤساء التنفيذيين في قطاع التصنيع في الضفة الغربية وفلسطين. بناء على نتائج تحليل 67 استبيان موزعة على مستويات ادارية مختلفة للشركات وباستخدام برنامج التحليل الاحصائي SmartPLS، فقد أظهرت النتائج مستويات تطبيق عالية لممارسات إدارة الجودة الشاملة و أنشطة المسؤولية الاجتماعية والأداء المستدام للشركات. وبناء على نتائج هذا البحث وجد ان اكثر ممارسات ادارة الجودة الشاملة تأثيرا هي "التركيز على العميل" و "إدارة الموارد البشرية"، يليها "التخطيط الاستراتيجي" و "إدارة العمليات"، من ناحية اخرى، كانت أقل هذه

ج

الممارسات تأثيراً هي "القيادة" و" تحليل المعلومات ". تشير نتائج اختبار الفرضيات ان هناك علاقة ايجابية وذات دلالة احصائية بين ممارسات TQM واستدامة الشركات . كما بينت النتائج الى وجود تأثير إيجابي وقوي للمسؤولية الاجتماعية على CS. بالإضافة الى ذلك، وجد ان CSR تعمل كوسيط جزئي للعلاقة بين TQM و CS . تم تطوير نموذج لتزويد صانعي القرار بمجموعة من الإرشادات حول كيفية دمج وتضمين ممارسات إدارة الجودة الشاملة وأنشطة المسؤولية الاجتماعية للشركات في إستراتيجيتهم وعملياتهم التشغيلية لتحقيق أهداف التنمية المستدامة للشركات.