

**Arab American University** 

**Faculty of Graduate Studies** 

# Assessment of Maturity of Quality Management System

# and its Impact on Operational Risk Management in

# **Palestinian Banking Sector**

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This thesis was submitted in partial fulfillment of the requirements for the Master`s degree in Quality Management

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# Assessment of Maturity of Quality Management System and its Impact on Operational Risk Management in Palestinian Banking Sector

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## Declaration

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# Assessment of Maturity of Quality Management System and its Impact on Operational Risk Management in Palestinian Banking Sector

I declare that I have written the entirety of this master thesis, and has been generated as a result of my own original thesis, and it has not been submitted elsewhere for any other degree. Moreover, I have not used any sources without giving them a reference.

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20 / 2 /2020

Signature

Date

## Dedication

This thesis work is dedicated to my wife, who has been a constant source of support and encouragement during the challenges of life. I am truly thankful for having you in my life. This work is also dedicated to my parents, who have always loved me unconditionally and whose good examples have taught me to work hard for the things that I aspire to achieve.

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## Abstract

The purpose of this research is to examine the effect and relationship of implementing a Quality Management System (QMS) on the Operational Risk in the Palestinian banking sector. Operational risk in organizations is considered the largest part of all risks involved in the banking industry since banks are using numerous tools to mitigate and manage operational risk. On the other hand, implementing a Quality Management System in banks can improve performance, increase efficiency, and increase the effectiveness in processes and services.

To investigate the relationship between QMS and Operational risk, qualitative methods were used. A questionnaire was developed and distributed to 14 banks operating in Palestine to collect data. The data were analyzed by using descriptive statistics and regression analysis to evaluate and test the research hypotheses.

The research assesses of maturity of implementation of Quality Management System principle in banks and implementation in operational risk practices in the bank. The main results indicate that there is a positive and significant relationship between some dimensions of Quality Management System and operational risk, such as leadership commitment, customer focus, and continuous improvement. The research exhibits a strong effect between quality management system principles (Leadership Commitment, Customer Focus and Continues Improvement Variables) and operational risk management, except some principle because there are some limitations in this study present. Considering the results of the research and the positive impact of Quality Management System on operational risk, the management of Palestinian banks may be more confident and encouraged to implement and adopt Quality Management System.

This is the first empirical research that studied the impact of implementing Quality Management System on operational risk by combining Quality Management System and Operational risk in Palestinian banking sectors. The study recommends that banks should implement quality management system principles to achieve high performance by reducing operational risks and increasing both efficiency and effectiveness.

**Keywords** – Quality Management System, Quality Management System Principles, Operational Risk, Banking Sector, Palestine.

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# List of Abbreviations

PMA	Palestine Monetary Authority
QMS	Quality Management System
ISO	International Organization for Standardization
ISO/IEC	International Organization for Standardization/International
	Electrotechnical Commission
PAM	Process Assessment Models
PRM	Process Reference Models
TQM	Total Quality Management
ORM	Operational Risk Management
FMEA	Failure Mode Effects Analysis
DMAIC	Define, Measure, Analyze, Improve, Control

## **Chapter One: Introduction** 1.1. Background

The banking sector in Palestine serves a wide range of the population, where 28% of the population either has a banking account or banking loan. There are 14 banks operating in Palestine, with a network of 337 branches and offices (7 local banks: three of them are Islamic banks and seven are foreign banks). Their total assets are 15.5 Billion USD, with total deposits of 13.1 Billion USD and a total credit portfolio of 8 Billion USD (PMA,2018).

Competition among banks is now one of the biggest challenges, as banks are now competing to attract the most customers to achieve the highest profitability. Since the pricing of banking services is determined through the market and competition in providing the lowest price for those services, it has become necessary to focus banks on providing the best banking services and focus on the best quality of service and the lowest cost.

The availability of a quality management system in banks helps to provide specialized tools in improving processes and handling problems, which helps reduce cost and increase profitability, as well as reduce the operational risks that cause actual losses.

The methodology of implementing quality management and improvement processes can be varied. The methodology is likely to have a different name or label, such as TQM (Total Quality Management), Six Sigma, Lean Sigma, BPR (Business Process Reengineering) or Operational Excellence (Ron Basu,2009). "Quality is fast becoming an essential aspect of banking, and in the coming years, it would form a basic requirement for the survival of the industry. It is indeed worthy of note that quality needs to be natural through positive attitude and quality culture in an organization" (Iyida, 2012).

In the recent years in the global financial sector and as a result of the collapse of some of the major organizations in the financial sector for weak implementation of the principles of governance and the existence of appropriate control measures, there was an urgent need to identify and classify the potential risks to which any organization could be exposed. Operational risks are considered those types of risks.

### **1.2. Research Problem**

The importance of a quality management system in a bank is to compete in the provision of banking services, meet the needs of customers, and its existence ensures that all the operations are carried out as required, without any defects or delay. Poorly or imperfectly designed processes often lead to difficulties in executing operations, staff errors, and the possibility of operational risks leading to direct or indirect losses to the Bank.

The diversity of operations in the bank, the expansion of the branches, the diversity of staff expertise, the plethora of instructions and laws issued, and the lack of standardized knowledge management mechanisms has led to a fluctuation in the provision of banking services and a discrepancy in the implementation of operations among Bank staff, resulting in dissatisfied clients and realized operational risk losses. Other improvements by banks that have left them exposed and vulnerable to operational risks include the constant change in internal operations, services provided, and alterations in products (Renzo et all 2007). Based on the foregoing, the study focuses on the importance of a quality management system to improve operations, control the bank's operational risks, reduce cost by eliminating wastage and defects, and achieving customer satisfaction through response time to implement the service and eliminate the variance. Its goals are to increase profitability for the bank and gain overall satisfaction (DQS, 2017). As stated by Abuhav (2017), there are many principals and components to a quality management system that play such active and crucial roles in positively fulfilling a bank's objective. This study discusses the influence of quality management systems on operational risks and how these risks can affect and impede on a bank's overall function, in the Palestinian banking sectors.

Operational risk is one of the most dangerous types of risk that can cause large losses in financial institutions in particular. There are many examples of losses in some financial institutions due to operational errors. Examples of these losses include the \$2.4 billion attributable to subsequent proceedings Enron and the 690 million loss caused by an unauthorized transaction in the Allied Irish Bank (Fatima, 2014). Another example of operational risk loss in the banks is the Deutsche bank. As published in its financial statements in 2017, there is a loss classified as operational risk. The operational risk losses totaled 615 Million EUR in 2017 and 3,072 Million EUR in 2016. The internal fraud totaled 38M EUR in 2017 and 397M EUR in 2016. External fraud totaled 15M EUR in 2017 and 2512M EUR in 2016. Execution, Delivery, and Process Management totaled 223M EUR in 2017 and 119M EUR in 2016 (Deutsche-bank, 2017).

Upon reviewing the annual report for the banks in Palestine, there are some banks that declared their losses from operational risk in their financial statements. Quds Bank is

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an example, for it declared 600,000\$ in 2018 as an operational loss. Although the banks did not always report the operational losses in their financial statements, this does not indicate that there is no actual loss. Some organizations do not identify those losses clearly in their financial statements or the specific mechanism to show those losses is absent.

The relationship is demonstrated by the conceptual framework model shown on Figure 2.3 below in which quality management principles are independent variables and operational risk dependent variable.



Figure 1.1: Model of independent and dependent variables

## **1.3. Research Questions**

This research focuses on answering the following questions:

• What is the degree of maturity of quality management system in banks?

- What extent implementing quality management system affects the operational risk.
- Is there a relationship between Quality Management System and the operational risk in Palestinian banks?

## **1.4. Research Objectives**

The objectives of this study are below:

- Implement quality management system to the improvement of processes and cost reduction by eliminating waste in the processes.
- 2. Implement quality management system in operational risk management to identify and assess risk.
- 3. Determine the linkage between quality management systems principles and operational risk management to obtain controlled environment.

## **1.5. Research Importance**

The study is considered important due to the following reasons:

- 1. Establishing quality management systems in banks improve processes.
- 2. Assisting management and employees in the banks to participate and see the results of this study, which will help them to identify the strengths and weaknesses that accompany the application of quality management system.
- 3. Assess of maturity Quality management system can be used to implement a quality tools to control the operation risk and mitigate the risks

- 4. Contribution in shaping a new vision and strategies for the application of quality management system; to improve and develop bank performance.
- 5. Assess of maturity Quality management system can be used to increase customer satisfaction by improving quality of services.

#### **1.6. Research Hypotheses**

There are two main hypotheses and each with seven sub hypotheses: -

**H1.** There is no significant impact of Quality Management System (QMS) on the effectiveness of operational risk management.

**H1a.** There is no significant impact of leadership commitment on the effectiveness of operational risk management.

**H1b.** There is no significant impact quality information availability & usage on the effectiveness of operational risk management.

**H1c.** There is no significant impact of employee training on the effectiveness of operational risk management.

**H1d**. There is no significant impact of employee involvement on the effectiveness of operational risk management

**H1e**. There is no significant impact of process design on the effectiveness of operational risk management.

**H1f**. There is no significant impact of customer focus on the effectiveness of operational risk management.

**H1h**. There is no significant impact of continuous improvement on the effectiveness of operational risk management.

H2. There is no significant impact of QMS on the practices of operational risk management.

**H2a**. There is no significant impact of leadership commitment on the practices of operational risk management.

**H2b**. There is no significant impact quality information availability & usage on the practices of operational risk management.

**H2c**. There is no significant impact of Employee Training on the practices of operational risk management.

**H2d**. There is no significant impact of employee involvement on the practices of operational risk management.

**H2e**. There is no significant impact of process design on the practices of operational risk management.

**H2f**. There is no significant impact of customer focus on the practices of operational risk management.

**H2h**. There is no significant impact of continuous improvement on the practices of operational risk management.

## **Chapter Tow: Literature Review**

### **2.1.Quality Management**

This literature review focuses on the crucial impact of Quality Management Systems on the operational risks associated with the bank's overall functionality in the Palestinian banking sectors. Increasing evidence has suggested that QMS, also known as Quality Management Systems, have had a successful impact on minimizing operational risks, while increasing customer satisfaction. A Quality Management System is a documented (ISO 9001:2015 clause 5.2.2) and constructed group of policies, methods, and operational functions that, when combined, create an integrated system that aids in achieving a bank's goals, targets, and missions (DQS, 2017). QMS cuts waste, time, and cost, while increasing profitability and overall satisfaction. Quality Management Systems play an important role in heightening the stability and efficiency in financial institutions and their banking systems internationally, while minimizing operational risk. Nyaga (2017) states in his study that quality management is being used by organizations and financial institutions in order to provide better business goals, while encouraging customers to make knowledgeable choices on products and services that are available. He defines quality in a service being provided is "characteristics that satisfy customer needs and confirm to measurable features" (p. 3).

According to work by Renzo et al (2007), banks are constantly improving and altering their services, products, and internal operations. These adaptations are the reason why banks and other financial institutions are experiencing an inflation in exposure to operational risks at such a "rapid pace" (Renzo, et al., 2007). This exposure has pressured

bank directors to convey their concerns about operational risks and enhanced risk management. Renzo et al. (2007) implemented a Basel II framework in their study to emanate how ISO/IEC 15504 standards could substitute the necessary structure required to meet regulatory standards in assessing financial and operational risks. Renzo et al. (2007) define operational risk in the Basel II framework as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk". (Renzo et al. 2007, p. 325).

### 2.1.1. Quality Management Principles & ISO 9001:2015

There are specific principles that are involved with Quality Management Systems that ensure proper structure and exercise fundamental concepts (Abuhav, 2017). The complete seven principles include:

- 1. Customer focus
- 2. Leadership
- 3. Engagement of People
- 4. Process approach
- 5. Improvement
- 6. Evidence-based Decision Making
- 7. Relationship Management

The ISO 9001:2015 states in section 4.4 precisely the requirements that Quality Management Systems need in order to be fixed. (Abuhav, 2017). The clause that states these requirements and principles are as follows:

- Establishment of Quality Management System according to the ISO 9001:2015 Standard Requirements (Abuhav, 2017).
- 2. Definition of processes and their interactions needed for the operation of this Quality Management system (Abuhav, 2017).
- 3. Continually maintain and the effectiveness of the Quality Management through improvement (Abuhav, 2017).

The ISO 9001:2015 specifically provides clauses that can be followed in order to ensure quality management (DQS, 2017). It assesses an organization's level of internal and external issues, whether policies and QMS are documented, whether leadership is being demonstrated properly, whether there is a "quality policy in place", desired results, etc. (DQS, 2017). The ISO 9001:2015 clauses and standards are very extensive and focus on improving customer satisfaction through effective implementation (DQS, 2017).

Figure 2.1 shows a a comprehensive model that explains the ISO 9001 standard introduction (biggerplate, 2019).



figure 2.1: ISO 9001 standard introduction (https://www.biggerplate.com/mindmaps/s765637/ iso-9001-standard)

Quality Management Systems and ISO 9001:2015 dive into a variety of principles that play active roles in quality management and providing quality services. Renzo et al. (2007) elaborate in their study on how the framework for Basel II allows banks of all sizes to fulfill their objectives without any constraints. This type of QMS provides flexibility, consistency, and is implemented with increasing levels of integrity throughout the assessment process in operational risk management for the capital of international banks to actual risks (Renzo, et al., 2007). Renzo et al. (2007) utilize three different approaches in their QMS that are suggested in the first of three pillars of the framework. The three approaches include the Advanced Measurement Approach, the Basic Indicator Approach, and the Standardized Approach (Renzo, et al., 2007). The Standardized Approach demands a more detailed analysis due to the need of defining each operational risk class, along with the laid-out chronicles of all the loss data in those operational risk's categorizations (Renzo, et al., 2007). The Basic Indicator approach utilizes a solitary risk indicator as a representative for the bank's general vulnerability to operation risk (Renzo, et al., 2007). Lastly, the Advanced Measurement Approach pivots to the extensive assessment of all "internal and external loss data, scenario analysis and aspects of the business and internal controls" (Renzo, et al., 2007, p. 324). The three pillars that are integrated into the Basel II framework include (Renzo, et al., 2007, p. 323):

- 1. The computation of base capital requirements
- 2. Directing the overseer to ensure that the suitable level of capital is selected by the banks, while endorsing better risk management practices
- 3. Focusing on the market requirements through disclosure standards on the bank's risk vulnerability and their assessment systems.

The quality management system by Renzo et al. (2007) utilized the ISO/IEC 15504 adaptable to PRM and PAM. PAM (process assessment models) demonstrate the detectability, while PRM (process reference models) are the primary and support category that are the base of operation risk management. PRM and PAM are both models that can be used to follow ISO standards by creating a constructed and methodical technique for procedure assessment and direct procedure improvement (Renzo, et al., 2007). Renzo et al. (2007) state that the primary category in PRM identifies operation risk assessments along with characterizing and analyzing what the operational risks are. On the other hand, the support category monitors, addresses and controls operational risk (Renzo, et al., 2007). Various validations are utilized when performing this Quality Management System in order to ensure that proper suggested solutions are demonstrated.

Renzo et al. (2007) conclude that the Basel II framework would be of advantage to stakeholders in Banks by decreasing the costs of losses, overcoming great risks, and allows an overall improvement and gain in risk management potentials. The ISO/IEC 15504 used in the Basel II framework is a valid standard for analyzing operational exposures and allows banks to make room for improvement at their own rapidity (Renzo, et al., 2007).

Dragolea, Achim, and Fleser (2011) conducted a study for a banking sector in Romania (BRD), where the researchers implemented a Quality Management System that followed the standards of SR EN ISO 9001:2001. The goal of the study was to increase the financial institution's efficiency and effectiveness by achieving the requirements of the stakeholders, in order to expand their satisfaction (Dragolea, et al., 2011). The design of this Quality Management System takes into consideration the essential principles of quality management, by structuring an institution based on proven concepts and enhancing the bank's production.

### **2.1.2.** Customer Focus

Dragolea et al. (2011) states in their study that it is important for the bank to pivot its attention to its clientele. ISO 9001:2015 states that the bank should have an extensive comprehension of the requirements that are needed in order to surpass the present and future needs of their clients (Rocha-Lona, et al., 2017). This denotes that any loss or profitability experienced by the bank starts with clientele satisfaction, which only suggests that the entire organization, operations, and the staff all lead to the client (DQS, 2017). DQS (2017) also states that this complies with the ISO 9001:2015 5.1.1 clause, which states the importance of "communicating to the organization the importance of meeting customer requirements". Dragolea et al. (2011) explain that this is part of the first of seven principles in ISO 9001:2015, which is *customer focus*.

Customer focus is a very important principle in ISO 9001:2015 (Rocha-Lona, Garza-Reyes, & Kumar, 2017). ISO 9001:2015 elaborates on this by stating that an entire organization is built on their customers (Rocha-Lona, et al., 2017). Banks should understand that flexibility and quick responses to their customers will lead to an increase in the bank's revenue, along with an increase in market shares (Rocha-Lona, et al., 2017). The bank should continue to identify "both the external and internal needs of the customer and translate them into products and services" (Nyaga, 2017, p. 14). All means necessary should be taken in order to achieve customer satisfaction (DQS, 2017). This denotes that the bank should utilize their resources to its maximum effectiveness (Rocha-Lona, et al., 2017). ISO 9001:2015 also explains that the bank should target the voice and creativity of their products to capture the customer, which will lead to the customer's loyalty. Once the bank has achieved the customer's loyalty, repeat business with them and future customers will continue (Rocha-Lona, et al., 2017). Nyaga (2017) states that customer satisfaction is correlated with the customer feeling valued and perceiving that the bank is striving to meet their needs through the services and products that they provide.

### 2.1.3. Leadership

The leadership principle introduces the establishment of purpose in management processing as a whole and the direction to which the bank leads. In this principle, it is important that the staff are completely embraced in succeeding the goals of the bank (Dragolea, et al., 2011). The requirements for this principle in ISO 9001:2015 are "setting goals and policies; planning; internal communication; and creating an efficient working environment" (Dragolea, et al., 2011, p. 1). The ISO 9001:2015 discusses that how a bank or institute manages their responsibilities can impact on leadership (Rocha-Lona, et al., 2017). By building successful leadership in the organization, the employees would fully understand and strive to succeed the organization's goals and objectives (Rocha-Lona, et al., 2017). Nyaga (2017) shares that important characteristics that need to be combined with leadership include "mastering quality agenda, evaluation of quality, participation in processes improvement, drafting strategies on quality, exploring customer changing needs, and striving to meet them" (p. 15-16). Nyaga (2017) continues that by having these characteristics, the bank would be able to provide services and products that are tailored in a culture that can encourage employees, satisfy customers, decrease quality costs, improve performance and productivity (p. 16). Leadership is the most crucial potential and expertise the manager or director of an organization should have (Rocha-Lona, et al., 2017).

### **2.1.4. Engagement of People**

The requirements for the Engagement of people principle include "defining and communicating responsibilities and authorizes; internal communication; identifying the need for competence; and participating in the analysis of product requirements" (Dragolea,

et al., 2011). Implementing training sessions and exercising positive group staff meetings lead to reinforcing quality products and production (Nyaga, 2017, p. 14). The ISO 9001:2015 states that all people involved in an organization are its essence and ladder for reaching goals (Rocha-Lona, et al., 2017). All people involved need to be inspired, committed, and active with the bank or organization (Rocha-Lona, et al., 2017).

#### 2.1.5. Process Improvement

The process approach principle focuses on utilizing all resources involved and managing all activities as a process (Dragolea, et al., 2011). Structured processes lead to successful results.

The system approach to management principle entails of the following requirements: "establish, implementing and maintaining a quality management system; the processes' intertwining, interrelating and succession; and motoring, measuring and analyzing process" (Dragolea, et al., 2011).

Process improvement is the process in which a business or organization is actively seeking to identify, assess, and enhance their process to meet new needs and goals (Dentch, 2017). Process improvement complies with the ISO 9001:2015 4.4 clause that states "have the processes of the organization been identified?" (DQS, 2017). This clause questions whether there is "opportunity for more improvement in the processes" and are further resources required (DQS, 2017). Dentch (2017) states the steps that the steps involved in process improvement can also be found in DMAIC. DMAIC can be combined with any "process improvement initiatives" (Dentch, 2017). The steps in DMAIC, as stated by Dentch (2017) are as follows:

- 1. Define the problem, improvement activity, opportunity for improvement, the project goals, and customer requirements (Dentch, 2017).
- 2. Measure process performance (Dentch, 2017).
- Analyze the process to determine root causes of variation, poor performance (defects) (Dentch, 2017).
- 4. Improve process performance by addressing and eliminating the root causes (Dentch, 2017).
- 5. Control the improved process and future process performance (Dentch, 2017).

Islam and Ahmed (2012) proved evident in their case study that process improvement can increase efficiency with multinational banks, along with cutting time used in the process. The researchers conducted their study in the credit card department of a multinational bank in New Zealand, Africa, the Middle East, and South Asia (Islam & Ahmed, 2012). They assessed the cycle time on the current business process for the time length it took for new credit card accounts to be opened for new and current customers (Islam & Ahmed, 2012). By removing the root causes in lengthy wait times throughout the current process, customer satisfaction increased as wait times were shortened after implementing process improvement (Islam & Ahmed, 2012). Islam and Ahmed (2012) utilized data collection through assessing the bank's documents, interviewing employees and customers, and focus groups. The data was designed through process flow diagrams and a variety of other tools (Islam & Ahmed, 2012). Their findings demonstrated that the process improvement implemented eliminates defects in final account creation and

providing the credit card to the customers; thus, it can be implemented in many organizations, especially bank sectors (Islam & Ahmed, 2012).

### **2.1.6.** Improvement

The improvement approach entails of the following requirements: "improving processes; management commitment; identifying improvements and implementing corrective actions; and reviewing documents and processes to find opportunities for improvement through preventative actions" (Dragolea, et al., 2011, p. 2). The ISO 9001:2015 states that continual improvement allows for flexibility and quick response to any opportunity given to a bank or organization (Rocha-Lona, et al., 2017). Nyaga (2017) states that in order for continual improvement to be successful and efficient, it must be anchored on the employees' creativity, experience, talents, and knowledge. The bank's continual improvement must include innovative interactions, understanding what supports the bank, and understanding the bank's levels of "flexibility, efficiency, and effectiveness" (Nyaga, 2017, p. 15). It is important that banks continue with improvement and implement it permanently in order to fully achieve all of the bank's capabilities and activities (Rocha-Lona, et al., 2017).

The *factual approach to decision* making principle includes the following requirements: "records that document evidences; approvals, decisions based on evidences; analysis conducted by management; control of measuring and monitoring devices; and analyzing data to gather evidence" (Dragolea, et al., 2011, p. 2). Lastly, the *mutually beneficial supplier relationships* principle is found in the ISO 9001 with the below

requirements: "control of suppliers; assessing suppliers; and analyzing and reviewing data about suppliers" (Dragolea, et al., 2011, p. 2).

Dragolea et al. (2011) state in their study that the ISO 9000 does not convey instinctive enhancements, rather it creates a guide for the bank to use that will allow them to select how to make the appropriate decisions from the beginning. The overseers of the bank create the direction and the internal domain for goals to be achieved (Dragolea, et al., 2011). The case study by Dragolea et al. (2011) concludes that there is an increase in the need for more client relationships with banks and that with the quality of services that can be achieved by the QMS, the banks would increase and improve their market share, along with their profitability.

### 2.1.7. Total Quality Management

Total Quality Management (TQM) is one of the well-known programs that has obtained a heavy acceptance in all types of industries by mangers and practitioners in recent years, it is defined as an integrated management philosophy aims at improving the quality of products and processes at all levels since its early development stages in the mid-1980s. (Rad, 2005; Ooi, 2012; Anil and Satish,2016). This wide recognition of TQM reflects the hypercompetitive and changing environment in where the organization compete which forces them to adopt new strategies for improving efficiency and effectiveness (Baidoun et al.,2018). There is no universal or consensus definition of TQM (Rungtusanatham et al., 2005), but there are many definitions instead. In this context, Porter & Tanner (2001) defined TQM as "a business process focusing on improving organizational effectiveness, efficiency and responsiveness to customer needs by actively involving people in process improvement activities". On the same way, Kaynak (2003, p. 406) defined it as "a holistic management philosophy that strives for continuous improvement in all functions of an organization, and it can be achieved only if the total quality concept is utilized from the acquisition of resources to customer service after the sale".

TQM aims at enhancing firm performance and, thus, competitive advantage (Duh et al.,2012). Companies invest in TQM to help them in delivering products or services that fulfill customers' needs and meet their expectations in terms of prices and quality to gain their loyalty over the competitors, (Mehralian et al., 2017). And, ultimately, increasing teamwork, productivity, product quality, competitiveness, market share, customer satisfaction and profitability (Kumar et al., 2011). A collaborative effort from various departments throughout the organization is required to successfully implement TQM along with top management commitment (Valmohammadi, 2011; Mehralian et al., 2017). Many researches argued that implementing TQM has a positive impact on improving organizational performance. Ng et al. (2014) argued that implementing TQM provides a strong support for improving customer loyalty and satisfaction, product quality and process quality.

Total Quality Management, also known as TQM, is a stepping stone to attaining quality management (Rocha-Lona, et al., 2017). It is a "business approach that pivots on improving an organization's effectiveness, efficiency, and responsiveness to customers' needs by actively involving people in process improvement activities" (Rocha-Lona, et al., 2017, p. 4). This is the perfect way to define Total Quality Management, for it declares the

general approach a bank needs to take in order to succeed far beyond its potential. Its framework incorporates continual improvement and improvement activities (Rocha-Lona, et al., 2017).



Figure 2.2: Model of synergistic operation of TQM and ORM based on process approach- Luburic (2012, p. 386, figure 7).

The above figure was pulled from the research by Luburic (2012, p. 386, figure 7). In his research study, Luburic (2012) explored the outcome of implementing both Total Quality Management and Operational Risk management in central banks. Luburic (2012) identifies Total Quality Management in his research as a "managerial philosophy and a program of changes aimed at continual improvement of business processes with a view to improving the quality of client-tailored products and services" (p. 382). He continues that this approach is pivoted towards succeeding in areas such as customer satisfaction, enhanced employee experience, increase in profit, and a decrease in cost. Luburic (2012) utilized the process approach towards Operational Risk Management, which included identifying the risk, assessing the situation, treating the risk, and merging the quality management principles of process management in the ISO/DIS 31000 2008. He continues that there are three principles in operational risk management that can aid total quality management in achieving an increase in business production (Luburic, 2012). These essential principles are systemic approach, the external event influences, and process approach (Luburic, 2012). Combined, these methods create a base model of increased innovation, inclusiveness, and efficiency that can be implemented in institutions and organizations worldwide (Luburic, 2012).

The model above depicts the "synergistic operation of TQM and ORM based on process approach" (p. 386). It is presented in the model that by combining both TQM and ORM, both processes become more logical and productive in stability and "transitional environment" (p. 386). Luburic (2012) shares the claims of another study that, while it is important to assess an organization as a whole during risk and other financial crises, an organization also needs to be assessed regularly when no crisis and risks are presented (p. 386). Given that, the advantage to utilizing both TQM and ORM is that both methods study the organization or financial institution's financial risk background. This ensures that risk management can be stabilized and logical in both a crisis and a well-balanced environment. Luburic (2012) concludes in his study that TQM can provide substantial elements to ORM that can outstandingly offer a more prosperous and prompt risk removal in any organization.

### 2.1.8. FMEA Tool

FMEA, also known as Failure Mode Effects Analysis, is a systematic and comprehensive tool that is used for analyzing processes to identify where and how a process may fail (EqulPNational Resource, 2013). It then analyzes the factors that fail in order to specify where in the process is change needed and how the process can be improved (EqulPNational Resource, 2013). This method involves input and feedback from everyone that is involved in the process that is being observed so that all measures and factors are assessed (EqulPNational Resource, 2013). EqulPNational Resource (2013) also states that it is crucial to ensure that all steps in the processes are numbered and in order. The ISO 9001:2015 standard 6.1.2 requires that "actions are taken in order to address risks and opportunities" (DQS, 2017). The FMEA methods complies with that standard. The steps that are involved in FMEA are as followed (EqulPNational Resource, 2013):

- 1. Select the process to evaluate (EqulPNational Resource, 2013).
- 2. Recruit a multidisciplinary team, including those involved at any point in the selected process (EqulPNational Resource, 2013).
- 3. Have the team meet and identify (for example by a flowchart) all of the steps in the selected process (EqulPNational Resource, 2013).
- 4. Using the list of questions below, list anything that could go wrong with the selected process (EqulPNational Resource, 2013).
- 5. Have the team assign a numeric value for the likelihood of occurrence, detection, and severity (EqulPNational Resource, 2013).
6. Evaluate the results to identify the Risk Profile Number. This is done by multiplying the three scores obtained (1 to 10 score for each of the likelihood of occurrence, detection, and severity) (EqulPNational Resource, 2013).

### **2.2.Operational Risk Management**

#### 2.2.1. Operational Risk

As stated earlier by Renzo et al. (2007), operational risks are increasing in financial institutions due to the integration of new technology and programs. Operational risks are defined by Renzo et al. (2007) as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk". Financial institutions are searching for new methods to implement that could eliminate any risk (Renzo et al., 2007). In order to take control or prevent risks, operational risk management, also known as ORM, are adopted in banks, financial organizations, and other non-financial organizations (Pinto, Magpili, and Jaradat, 2015). This below chart was provided by the work of Nyaga (2017).

Pinto, Magpili, and Jaradat (2015) define operation risk management as "managing operational risks by using various tools to highlight systems approach". Pinto et al. (2015) explain operational risk management as the design and control methods that impact any type organization, financial bank sectors, and other operations. Pinto et al. (2015) continue in their case study by stating that operational risk management can be implemented through both quantitative and qualitative analysis and by integrating "deterministic and probabilistic approaches". Risk management, in general, is recognizing, assessing, and eliminating any

unwanted defects. These unwanted defects can be caused by many factors, such as operational safety, financial domain, etc. (Pinto et al., 2015). The outcomes of operational risks all depend on the way unwanted defects are handled and the effects of the operational risk management (Pinto et al., 2015).

While operational risk defects are unpredictable, they are increasing and constantly arising (Nyaga, 2017). Given the complexity and advancement of technology with other factors, it is important that financial institutions adopt risk management methods with "supportive management culture" to establish the diminishment of risk. Other factors mentioned by Nyaga (2017, p. 4) that can cause risk include:

1.Operational losses

2.Failure in quality inputs

3.Fraudulent activities

4. Employees involved funds misappropriation

Nyaga (2017) continues that these factors can be so crucial and enduring on a bank or organization, that it leads to it collapsing. While the majority of it (risk and losses) is due to internal operation, there are many techniques that can be used to create a suitable ORM needed by the financial institution. Nyaga (2017) used this important information to study the implementation of QMS in commercial banks in Kenya, along with creating ORM, identifying which ORM works best for the banks in Kenya, and understanding the relationship between QM and ORM. The limitations Nyaga (2017) found present in the banks of Kenya include banks resorting to liquidating resources due to financial risk and losses. This was found evident in the "Chase bank of Kenya, Imperial Bank of Kenya, and

Dubai Islamic Bank of Kenya" (Nyaga, 2017, p, 17). Majority of their losses were due to poor staffing that carried out fraudulent malpractices (Nyaga, 2017).

### 2.2.2. Risk-based Thinking

Deysher (2015) elaborates on "Risk Based Thinking" as it relates to the ISO 9001:2015. Deysher (2015) defines risk as a concept that is associated with the international requirements for the unknown in attaining those goals and objectives. He (Deysher , 2015) continues that risk-based thinking has always been integrated in the ISO 9001, especially the 2015 version. It emphasizes on "preventative action" (Deysher, 2015, p. 8). The advantages of implementing risk-based thinking, as stated by Deysher (2015) include:

- Enhancing customer satisfaction and confidence (Deysher, 2015, p. 9)
- Satisfying consistency of quality of services and products being provided (Deysher, 2015, p. 9)
- Creating a proactive culture of prevention and improvement (Deysher, 2015, p.
  9)

To implement risk-based thinking, an organization, financial institution, or bank sector must recognize what their opportunities and risks are (Deysher, 2015). The next step is to plan what actions are needed in order to address the risks, while assessing what is allowed and what isn't (Deysher, 2015). Once this has been completed, the organization must actively implement the plan created (Deysher, 2015). Once it has been proactively exercised in the organization, its effectiveness must be assessed (Deysher, 2015). Continual improvement is generally the last step; for the organization must learn from the mistakes

and experience gained from the implemented plan to continue to improve it (Deysher, 2015). Improvement should never end.

#### **2.3.Previous studies**

There is a plethora of previous studies that focus on issues related to improving bank operations by increasing profits and decreasing operational risks and losses. Duarte, Low, and Schiffauerova (2018) constructed, in their study, a clearer comprehension of the costs that are affiliated with enhancing the quality of banking within an organization and the negatives that are present when declination is being exercised. Their study (2018) oversees the financial data of Columbian banks and to which they created a cost of quality (COQ) model based on that information. While there have been studies that discuss COQ in relation to the "service industry" (2018), Duarte et al. (2018) have made it clear that very little operations research has been conducted on COQ in relation to product performance using models. The major distinction found in the study by Duarte et al. (2018) and this study is the different approaches that are used to conduct the research needed for analysis. While this study utilized QMS as the research method, Duarte et al. (2018) chose the COQ method and models. Secondly, their study was conducted on Columbian banks, while this study assessed bank sectors located in Palestine. Given that the information found in their study is very helpful and their study and this study aim to achieve the same goal of enhancing "organizational quality" (2018, p. 2181), still the tow studies contrast in many subareas.

Williams, Bertsch, Dale, Wiele, Iwaarden, Smith, and Visser (2006) conducted a study that focuses on identifying the precise problems that are found with quality and risk management, in three types of risk. Williams et al. (2006) elaborate on "what must both risk and quality management still learn" (p. 81). Williams et al. (2006) utilized previous studies and data from past private companies to assess. They also utilized "the Australian/New Zealand stand for risk manage AS/NZ4360 and the development of a risk management modally by the European Foundation for Quality Management" as their approach and methodology (Williams, et al., 2006, p. 67). What differentiates this study from mine is that the researchers studied three types of risks and conclude that quality management may be of little assistance in one of the types of risk, which is in "operational risks if the organization does not even know they are running it" (Williams, et al., 2006). My research dissects QMS in financial organizations and bank sectors by extensively discussing the different types of risks, while suggesting the different solutions and approaches that can be used in place for risk prevention and continuous improvements, as a whole.

The work by Nyaga (2017) shares many of the similar goals and beliefs that are used in my study in relation to quality management system and operational risk management. Given that, much of his work was used as cogent to theories that are discussed in this research study. His overall conclusion was proven evident and believes that operational risk management can be controlled and effective when using the proper QMS (Nyaga, 2017). While our work shares the same ideas, my research is distinctive, given that I evaluate a plethora of different risk management approaches, such as lean management and FMEA, that were not studied by Nyaga or assessed in his research (2017).

Luburic (2012) pivots his study towards succeeding in areas such as customer satisfaction, enhanced employee experience, increase in profit, and a decrease in cost. He studied the inputs and outcomes of combining QMS and ORM to improve the overall quality of the organization (2012). His study was targeted specifically towards Central Banks, while my study was targeted towards bank sectors in Palestine and distributed surveys to aid in proving the conclusion evident. However, Luburic's (2012) work did not assess or distribute a survey to be used for data. He concluded that utilizing QMS and ORM concurrently can contribute profoundly to a financial organization or bank's success (Luburic, 2012).

In the work by Paraschivescu (2016), the researcher uses a combination of theories to integrate quality risk management and risk management systems. The researcher (2016) explains in his study how both methods would be utilized as one. His conclusion states this approach is very complex and therefore requires a "qualified management and accurate at all levels of responsibility" (Paraschivescu, 2016, p. 60). This study did not utilize any new data or distribute surveys (Paraschivescu, 2016). It differentiates from my survey because its research is limited to previous theories as the basis for combining quality risk management and risk management system into one approach (Paraschivescu, 2016).

# **Chapter Three: Methodology**

#### **3.1.Introduction**

This section will discuss the methodological approach for investigating the relationship between implementing quality management system (QMS) and Operational risk in the research, which is considered the main pillar for conducting research. It will also discuss the methods followed to collect the required data and the methods and techniques of data analysis. And the research population will be discussed and reliability measures that were used to ensure data validity will be presented.

A sample was designed for the study to use as a guide in understanding the operational risks associated with the bank's current overall functionality in the Palestinian banking sectors.

## **3.2.Research Design**

This is a quantitative study. The unit of analysis for this study was individual. There was a total of 102 surveys conducted. Each survey included a questionnaire that was filled out and returned. All surveys were completed individually. The survey concluded of multiple sections. Targeted areas questioned in the survey included:

- 1. Demographic information
- 2. Quality Management System
  - a. Leadership Commitment
  - b. Quality Information Availability & Usage

- c. Employee Training
- d. Employee Involvement
- e. Process Design
- f. Customer Focus
- g. Continuous Improvement
- 3. Operational Risk
  - a. The Effectiveness of Operational Risk
  - b. Operational Risk Management Practices Suitable

## **3.3.**Population of the study

The target population in this research is employees that work in audit, risk management, quality departments, and senior business departments in bank sectors located in Palestine. The data used in this study was a total of 102 individuals, which consisted of 67 males and 35 females. All employees who completed these varied in different age groups. Other demographic information that was used in the survey include age groups, gender, social status, educational level, job position, and years of experience. This information was used to ensure the validity of the survey answers. All employee information remained anonymous and confidential to ensure the safety and privacy of the employee.

## **3.4.**Sample Design

Due to limited resources, surveys were sent out to create a sample to use for this research study. The sample design and specific source of data was received directly from the employees that completed the surveys, who work in audit, risk management, quality departments, and senior business departments in bank sectors located in Palestine. Below is the list of banks in Palestine that participated in the survey for the sample. A total of 160 surveys were sent out and 102 were returned completed.

Table 3.1: Bank Names							
Bank Name	# Of Employee	# Distributed Questioner	# Returned Questioner				
Palestine Islamic Bank	9	9	3				
Arab Islamic Bank	20	20	15				
Quds Bank	15	15	10				
Arab Bank	15	15	14				
Bank of Palestine	22	22	22				
Palestine Investment Bank	6	6	3				
National Bank	7	7	0				
Safa Bank	7	7	7				
Cairo Amman Bank	19	19	5				
Bank of Jordan	10	10	10				
Housing Bank for Trade and Finance	10	10	6				
Jordanian Ahliy Bank	7	7	7				
Egyptian Arab Land Bank	7	7	0				
Commercial Bank of Jordan	6	6	0				
Sum	160	160	102				

There was little to no error in the reliability of the source of the data for all of the surveys were completed by employees anonymously. The reliability is ensured given the internal consistency being used in the questions provided on the survey to evoke different responses. The validity of the data had little to no error for all surveys were completed by employees from different departments at different banks in Palestine. The validity is also ensured by the measure of different questions being asked in the survey to cover all areas needed for assessment.

#### **3.5.Data Collection**

The data collection is placed between May of 2019 to July 2019. The techniques and methods used in obtaining the data included questionnaires, along with a quantitative approach as a guide. These questionnaires were emailed to the participants and were received back completed on paper.

The strength of the study was the different levels of employees and departments that took part in providing their honesty in the questionnaires. The strength of the study is also found in the five options given to select from as a response. These five options were strongly agree = (5), agree = (4), Neutral= (3), disagree = (2), and strongly disagree = (1).

The method of statistical analysis is descriptive statistics. A chart was created stated demographics for the participants, number of participants, number of female/male participants, age ranges, social status, educational level, position, job, and years of experience. The procedures that were used in gathering the data included emailing the surveys to be completed, receiving the completed surveys, and entering the information diligently in SPSS for analysis.

# **Chapter Four: Data Analysis and Findings**

## **4.1.Introduction**

In this chapter, the results of the statistical analysis of the study's questions and hypotheses will be presented and then commented on, as this study aimed to determine the effect of applying a quality management system on operational risks in Palestinian banks sector. In order to achieve this, the researcher used a questionnaire consisting of 50 question divided on nine field, and distributed on a sample of 160 employees working in Palestinian banks and in order to explain the results, the researcher used the following averages:

Interval	Description
1.0 -2.33	Low
2.34 - 3.66	Medium
3.67 - 5.0	High

## **4.2.Demographic Data**

Below is the demographic profile of the respondents to the survey used in this research study.

Table 4.1: Demographic Data					
Variable	Categories	Number of Respondents	Percentage (%)		
Age	Less Than 30 Years	43	42.2		

	30 - 39	37	36.3
	40 - 49	19	18.6
	More than 50	3	2.9
Sav	Male	67	65.7
Sex	Female	35	34.3
	Single	72	70.6
Social Status	Married	28	27.5
	Divorced / Widowed	2	2.0
	Diploma	2	2.0
Educational Level	Bachelor	84	82.4
	Master	16	15.7
	Manager	21	20.6
	Assistant Manager	9	8.8
Position	Supervisor	15	14.7
	Head of Division	16	15.7
	Employee	41	40.2
	Quality Management	8	7.8
	Risk Management	31	30.4
Job	Internal Audit	26	25.5
	Business	10	9.8
	Others	27	26.5
	Less Than 5 Years	25	24.5
Experience Years	5 - 10	40	39.2
	More than 10 Years	37	36.3

Source: Researcher's Computation & SPSS

Table 4.1 of the educational level item showed that the research sample of the diploma category is very low it has a number of (2) employees and 2% form sample study, because the banks are employ the academic of the Bachelor's degree or more, because the banking work is sensitive and requires accuracy and diligence and require a good information in the fields of study as the number of bachelor employees reached 84 and 16 employees who hold a master's degree, as the banks seek to employ higher-level

educational qualifications to benefit from them and their scientific and practical experiences.

The Job item refers to the limited number of employees in the profession of quality management as the number of these employees reached within the research sample (8) and 7.8%, because many banks do not have a special unit for quality management, which is one of the weaknesses in the application of quality principles in those banks and those banks are apply some principles of quality through other departments under several names.

As for the years of experience item, the results of the sample indicate that they were distributed to more than one category, which indicates a diversity in the number of years of experience in the sample that was studied.

## 4.3. Reliability of Measures:

To measure the reliability of the study, the Cronbach alpha equation was used to determine the internal reliability of the questionnaire paragraphs, as it reached 95.5%. This value indicates that tool has an appropriate degree of stability and meets the purposes of the study and Table No. (4.2) shows the coefficient of persistence for each field of study, the reliability of each variable is estimated by calculating the reliability scale in SPSS. The Cronbach Alpha values are:

Table 4.2: Reliability of Measures					
Dimension	Number of Items	Cronbach Alpha			
All Dimension	50	0.955			

Quality Management System (QMS)	37	0.948
Leadership Commitment (LC)	5	0.773
Quality Information Availability & Usage (QI)	4	0.755
Employee Training (ET)	6	0.830
Employee Involvement (EI)	4	0.817
Process Design (PD)	5	0.811
Customer Focus (CF)	6	0.801
Continuous Improvement (CI)	7	0.820
Operational Risk (OP)	13	0.886`
Effectiveness of Operational Risk	8	0.870
Operational Risk Management Practices Suitable	5	0.771

Source: Researcher's Computation & SPSS

# 4.4.Means and Standard Deviation for variables

for to explain the results, the researcher analyzed the questionnaire paragraphs, and the

calculate the means and standard deviations were extracted for each paragraph of the

tool. The following is a show of that.

# 4.4.1. Leadership Commitment

Table 4.3: Leadership Commitment variables					
Item	Mean	Std. Deviation	Minimum	Maximum	Degree
1. The bank has transparency in its mission and vision.	3.93	0.893	1	5	High

2.	The development of the quality system is a fundamental part of the Bank's mission	4.18	0.681	2	5	High
3.	Senior management creates a positive environment in the organization to improve quality	3.76	0.835	1	5	High
4.	The bank has sufficient financial resources to develop quality	4.00	0.613	2	5	High
5.	Senior management aims to improve the quality system in the long term	4.05	0.651	2	5	High
Le	adership Commitment	3.97	0.527	2.2	5	High

The table 4.3 shows that Leadership Commitment has a mean of (3.97). Item No# 2 (The development of the quality system is a fundamental part of the Bank's mission) has the highest mean (4.18), which means the respondents have strongly agreed that the development of the Quality Management System is a part of the bank's mission. Item No# 3 (Senior management creates a positive environment in the organization to improve quality) has the least mean (3.76), which conveys that some respondents do not feel engaged or included in the banks' objective.

The researcher believes that the banks in Palestine have a high commitment in developing quality systems and using the necessary resources to develop quality systems. Quality systems are also a major part of the bank's mission and vision and are considered to be long-term goals to achieve its vision as overall

	Table 4.4: Quality Information Availability & Usage variables						
	Item	Mean	Std. Deviation	Minimum	Maximum	Degree	
1.	All employees are informed of the quality standards approved and required	3.89	0.843	2	5	High	
2.	All employees are informed about any changes or modifications in the work procedures, regulations and regulations on an ongoing basis	4.12	0.775	2	5	High	
3.	There is an effective and accurate database on the costs of funds, deposits and financing pricing	4.08	0.817	2	5	High	
4.	Employees provide feedback to the management on the progress of the Bank's quality development process.	3.47	0.982	1	5	Medium	
Qu Us	ality Information Availability & age	3.89	0.651	2.5	5	High	

## 4.4.2.Quality Information Availability & Usage

The table 4.4 shows that Quality Information Availability & Usage has a mean of (3.89). Item No# 2 (All employees are informed about any changes or modifications in the work procedures, regulations and regulations on an ongoing basis) has the highest mean (4.12), which conveys that most respondents agreed that employees in the bank are informed about any changes in the work procedures and regulations. The item No#4 (Employees provide feedback to the management on the progress of the Bank's quality development process) has least mean (3.47), which signifies that some of the respondents do not agree that the employees provide feedback to management about quality management process.

The researcher believes that the banks in Palestine undertake procedures to publish the necessary information to all employees and inform them of any changes in the instructions and procedures issued, which is reflected positively in the process of applying quality systems in the bank.

The researcher believes that the banks also obtain feedback from employees regarding quality operations and take them into consideration to develop systems efficiently and effectively.

	Table 4.5: Employee Training Variables						
	Item	Mean	Std. Deviation	Minimum	Maximum	Degree	
1.	There are criteria for assessing employees on appointment (e.g. education, skills, experience).	3.70	0.983	1	5	High	
2.	The Bank will train new employees in the work skills	3.94	0.729	2	5	High	
3.	Staff are trained on the principles and concepts of quality management	3.60	0.847	1	5	Medium	
4.	The Bank evaluates the effectiveness of training provided to employees	3.75	0.841	1	5	High	
5.	The training programs offered by the Bank to its employees are consistent with its objectives	3.91	0.733	2	5	High	
6.	The Bank evaluates employee satisfaction with the training offered to them	3.76	0.881	1	5	High	
En	nployee Training	3.77	0.617	2.17	5	High	

# 4.4.3.Employee Training

The table 4.5 shows that Employee Training has a mean of (3.77). Item No# 2 (The Bank will train new employees in the work skills) has the highest mean (3.94), which conveys that most respondents agree their training for new employees to improve his skills. Item No#5 (The training programs offered by the Bank to its employees are consistent with its objectives) has the next highest mean (3.91), which conveys that most respondents agree their training programs correspond with the banks' objectives. The item No#3 (Staff are trained on the principles and concepts of quality management) the least mean (3.60), which means that some respondents believe the banks do not train their employees on the principles of quality management.

The researcher believes that banks generally give training courses to employees to develop their skills and increase their efficiency in work, but the nature of these training courses are not specialized in quality systems

	Table 4.6: Employee Involvement Variables							
	Item	Mean	Std. Deviation	Minimum	Maximum	Degree		
1.	The employees are involved in the process of quality development in the organization of each location	3.31	0.808	2	5	Low		
2.	There is a commitment of staff to the success of the bank	3.80	0.784	2	5	High		
3.	The Bank actively seeks to encourage staff to work in a team	3.75	0.861	2	5	High		

## 4.4.4.Employee Involvement

spirit					
4. The Bank works to develop the spirit of innovation and creativity among its employees in order to achieve its objectives	3.56	1.020	1	5	Medium
Employee Involvement	3.61	0.701	1.75	5	High

The table 4.6 shows that Employee Involvement has a mean of (3.61). Item No# 2 (There is a commitment of staff to the success of the institution) has the highest mean (3.80), which conveys that most respondents agreed that there is staff commitment present in the banks. Item No#1 (The employees are involved in the process of quality development in the organization of each location) has the least mean (3.31), which means some respondents think the employees are not involved in the process of quality development in the banks.

The researcher sees a weakness in the process of engaging employees in setting quality goals and developing quality systems in banks operating in Palestine, the researcher also sees that there is a weakness in the application of creativity and innovation processes in developing quality systems, which sometimes leads to the lack of adoption of employees in the application of quality goals and principles in Banks

## 4.4.5.Process Design

Table 4.7: Process Design Variables							
Item	Mean	Std. Deviation	Minimum	Maximum	Degree		

1. Business Process, take the needs of your customers into consideration	4.14	0.661	2	5	High
2. work procedures are clear to employees	3.98	0.796	2	5	High
<ol> <li>Cross-functional teams are used to design processes</li> </ol>	3.79	0.788	1	5	High
4. Business Process are constantly developed and adapted to quality standards and strategies	3.91	0.631	2	5	High
5. The Bank provide staff with leaflets explaining the work procedures	3.95	0.825	1	5	High
Process Design	3.95	0.561	2.20	5	High

The table 4.7 shows that Process Design has a mean of (3.95). Item No# 1 (Business Process, take the needs of your customers into consideration) has the highest mean (4.14), which signifies that most respondents strongly agree that the banks take the customer's needs into consideration. Item No# 2 (work procedures are clear to employees) has the next highest mean (3.98), which means that most respondents believe the procedures in the bank are clear. Item No#3 (Cross-functional teams are used to design processes) has the least mean (3.79). While it is the least, the respondents agreed that there is a cross functional team used to design process.

The researcher believes that the banks operating in Palestine take attention in designing their processes to the needs of customers, and work to take into consideration the objectives and principles of quality when designing processes and procedures. In addition to that, the banks make an explanation and clarification to the employees about applying the processes

and procedures used in the banks

## **4.4.6.Customer Focus**

Table 4.8: Customer Focus Variables									
Item	Mean	Std. Deviation	Minimum	Maximum	Degree				
<ol> <li>There are clear criteria for measuring customer satisfaction with the services provided by the Bank</li> </ol>	3.71	0.950	1	5	High				
2. The bank conducts market studies to determine customer requirements	3.87	0.792	2	5	High				
3. The bank receives customer complaints and works to address them	4.43	0.572	3	5	High				
4. The bank has a VIP corner for VIP clients	4.23	0.743	2	5	High				
5. The Bank always strives to meet current and future customer needs	4.18	0.666	2	5	High				
Customer Focus	4.09	0.537	2.67	5	High				

The table 4.8 shows that Customer Focus has a mean of (4.09). Item No# 3 (The bank receives customer complaints and works to address them) has the highest mean (4.43), which signifies that most respondents strongly agree that the banks receive complaints and work to resolve them. Item No# 4 & 5 (The bank has a VIP corner for VIP clients; The Bank always strives to meet current and future customer needs) has the next highest mean

(4.23, 4.18) which conveys that most respondents show that there is a high interest for customer needs. Item No#1 (There are clear criteria for measuring customer satisfaction with the services provided by the Bank) has the least mean (3.71). While it is the least, the respondents still agree that there are clear criteria for measuring customer satisfaction.

The researcher believes that the banks operating in Palestine consider that customer focus is one of the most important principles of quality to be followed, especially for important customers (VIP Customers), as they use all possible means and tools to satisfy their customers to meet their current and future needs as well as address and solve customer complaints

	Table 4.9: Continuous Improvement Variables									
	Item	Mean	Std. Deviation	Minimum	Maximum	Degree				
1.	Your bank is working to compare its products with the best in the market	4.15	0.723	2	5	High				
2.	Your bank is constantly empowering and training staff	4.04	0.807	2	5	High				
3.	Your bank encourages employees to brainstorm on how to improve systems and processes	3.65	1.001	1	5	Medium				
4.	Errors are learned and improvements are made	4.10	0.738	2	5	High				
5.	The process of continuous improvement helps reduce operational risks	4.21	0.650	2	5	High				

## **4.4.7.Continuous Improvement**

<ol> <li>Staff training is one of the ways to minimize operational risk</li> </ol>	4.34	0.637	2	5	High
<ol> <li>The Bank continuously monitors operational risks in order to improve processes, systems and staff training</li> </ol>	4.33	0.603	2	5	High
Continuous Improvement	4.11	0.518	2.71	5	High

The table 4.9 shows that Continuous Improvement has a mean of (4.11). Item No# 6 (Staff training is one of the ways to minimize operational risk) and item No#7 (The Bank continuously monitors operational risks in order to improve processes, systems and staff training) has the highest mean (4.34 & 4.33), which means that most respondents strongly agree that training staff minimizes the operational risk and continuously monitors operational risk to improve the process and systems. Item No#3 (Your bank encourages employees to brainstorm on how to improve systems and processes) has the least mean (3.65). While it is the least, the respondents still agreed that there is encouragement from employees present to improve processes and systems.

The banks operating in Palestine perform procedures to implement continuous improvement processes by comparing their services with competing banks, and to train employees and develop their skills, in addition learning from errors and problems that occur and the mechanism for handling with this problems, this improvements work to reduce the operational risks and thus reduce the losses that can be achieved.

The researcher believes that there is a general weakness in the process of involving employees in continuous improvement processes to improve process performance and develop systems in general.

	Table 4.10: Effectiveness of Operational Risk Variables								
	Item	Mean	Std. Deviation	Minimum	Maximum	Degree			
1.	The bank holds training workshops for its employees explaining ways of dealing with operational risks	4.19	0.671	1	5	High			
2.	There is a written and clear operational risk policy in your bank	4.34	0.605	3	5	High			
3.	<ol> <li>The bank is applying operational risk management techniques such as loss root cause analysis and scenario analysis in decision making activities</li> </ol>		0.666	2	5	High			
4.	The bank discloses annual operational risk report	3.98	0.808	2	5	High			
5.	The Bank discloses the operational risk report through the Risk Committee of the Board of Directors	4.16	0.686	2	5	High			
6.	The bank uses scenario analysis and inspection in reducing operational risk	4.02	0.758	2	5	High			
7.	Understanding business environment and internal process control is considered the main factors in enhancing the effectiveness of risk management	4.41	0.533	3	5	High			
8.	The bank is usually using risk and control–self assessment in dealing with operational risks	4.23	0.579	3	5	High			
Eff	ectiveness of Operational Risk	4.18	0.483	3	5	High			

# 4.4.8.Effectiveness of Operational Risk

The table 4.10 shows that Effectiveness of Operational Risk has a mean of (4.18). Item No#

7 (Understanding business environment and internal process control is considered the main

factors in enhancing the effectiveness of risk management) has the highest mean (4.41), which conveys that most respondents strongly agree that the comprehension of the environment and internal processes are the main factors to enhancing the effectiveness risk management. Item No# 2 (There is a written and clear operational risk policy in your bank) has the next highest mean (4.34), which means that most respondents believe that most banks have a written policy for operational risk. Item No#4 (The bank discloses annual operational risk report) has the least mean (3.98), which eludes that most respondents agree that the banks disclose their operational risk report.

The researcher believes that banks operating in Palestine are working to implement effective measures in managing operational risks, through several methods that banks use to control and try to reduce the impact of losses resulting from the occurrence of any of the operational risks.

The banks operating in Palestine there are policies and work procedures related to managing operational risks, and the reason for publishing and distributing them is on all employees. Banks also analyze operational risks through self-assessment of operational risks in order to reduce the potential impact of any of the risks.

## 4.4.9. Operational Risk Management Practices Suitable

Table 4.11: Operational Risk Management Practices Suitable Variables							
Item	Mean	Std. Deviation	Minimum	Maximum	Degree		

1.	Analyzing operational failures and sharing lessons learnt with all staff would help to prevent failures in future	4.39	0.510	3	5	High
2.	Allowing staff to give ideas on how to continuously improve processes, systems would improve on quality performance	4.25	0.640	2	5	High
3.	Senior management should be committed to a quality performance-oriented culture across bank to manage operational failures	4.07	0.707	2	5	High
4.	Bank should have teams that deal with quality performance issues such as poor customer service and responds quickly to improve	4.03	0.764	2	5	High
5.	Bank should continuously monitor operational failures in order to improve processes, systems and up skilling of staff	4.26	0.644	2	5	High
Oj Pr	oerational Risk Management actices Suitable	4.20	0.475	3.20	5	High

The table 4.11 shows that Operational Risk Management Practices has a mean of (4.20).

Item No# 1 (Analyzing operational failures and sharing lessons learnt with all staff would help to prevent failures in the future) has the highest mean (4.39,) which means that most respondents strongly agree that analyzing failures and sharing lessons learnt helps to reduce and prevent failures. Item No# 5 (Bank should continuously monitor operational failures in order to improve processes, systems and upskilling of staff) has the next highest mean (4.26), which conveys that most respondents believe the banks should continuously monitor their operational failures and risk to improve process and employees' skills. Item No#2 (Bank should have teams that deal with quality performance issues such as poor customer service and responds quickly to improve) has the least mean (4.02), which means that most respondents think the banks should have teams to deal with the poor-quality performances and services, in order to improve it quickly.

The researcher believes that the banks operating in Palestine possess effective practices in the operational risk management process by working to analyze operational risks and errors that occur during the implementation of their operations.

One of the most prominent reasons for the existence of effective systems for managing operational risks is the emergence of economic crises in the world and the losses caused by those crises, forcing central banks to issue strict instructions regarding risk management systems.

Table 4.12: Means and standard deviation for Variables									
Item	Mean	Std. Deviation	Minimum	Maximum	Degree				
Leadership Commitment (LC)	3.97	0.528	2.20	5.00	High				
Quality Information Availability & Usage (QI)	3.89	0.651	2.50	5.00	High				
Employee Training (ET)	3.77	0.618	2.17	5.00	High				
Employee Involvement (EI)	3.61	0.701	1.75	5.00	Medium				
Process Design (PD)	3.95	0.561	2.20	5.00	High				
Customer Focus (CF)	4.09	0.537	2.67	5.00	High				
Continuous Improvement (CI)	4.11	0.519	2.71	5.00	High				
Effectiveness of Operational Risk	4.18	0.484	3.00	5.00	High				

#### 4.5. Means and standard deviation for all Variables:

(ORE)					
Operational Risk Management Practices Suitable (ORP)	4.19	0.476	3.20	5.00	High

The table 4.12 shows that all variables had a mean between 3.61 and 4.19, which signifies that most respondents agree with the questionnaire's questions for all dimensions. The Operational Risk Management Practices Suitable dimension has the highest mean (4.19), which eludes that the respondents strongly agree that there is a good practice for operational risk in the banks. The next highest mean is Effectiveness of Operational Risk (4.18), which also conveys that there is an effectiveness in the operational risk in the Palestinian banks. Customer focus and Continuous Improvement had a mean of (4.09 & 4.11), which eludes that most respondents agree that there is a good interest in this dimension.

The researcher believes that there is a strong and effective application of operational risk management systems and practice in banks operating in Palestine, in addition to a good application of some principles of quality management system such as leadership and customer focus and continuous improvement, while there is some weakness in applying some principles such as employee involvement and training, which requires banks to focus On some principles to increase the effectiveness of the application of quality principles in banks operating in Palestine

	Table 4.13: Correlation Coefficients									
		LC	QI	ET	EI	PD	CF	СІ	ORE	ORP
IC	Pearson Correlation		.407**	.624**	.656**	.451**	.490**	.638**	.583**	.493**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QI	Pearson Correlation	.407**		.645**	.487**	.708**	.464**	.464**	.419**	0.169
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.090
ET	Pearson Correlation	.624**	.645**		.731**	.669**	.633**	.685**	.566**	.288**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.003
	Pearson Correlation	.656**	.487**	.731**		.566**	.437**	.667**	.487**	.347**
EI	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
	Pearson Correlation	.451**	.708**	.669**	.566**		.637**	.617**	.510**	.245*
PD	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.013
05	Pearson Correlation	.490**	.464**	.633**	.437**	.637**		.674**	.620**	.383**
CF	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000
~	Pearson Correlation	.638**	.464**	.685**	.667**	.617**	.674**		.686**	.395**
CI	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000
0.05	Pearson Correlation	.583**	.419**	.566**	.487**	.510**	.620**	.686**		.594**
ORE	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000
000	Pearson Correlation	.493**	0.169	.288**	.347**	.245*	.383**	.395**	.594**	
ORP	Sig. (2-tailed)	0.000	0.090	0.003	0.000	0.013	0.000	0.000	0.000	
**. Corre	elation is significant at t	he 0.01 lev	el (2-tailed).							
*. Corre	lation is significant at th	ne 0.05 leve	l (2-tailed).							

## **4.6.Pearson Correlation Matrix**

Source: Researcher's Computation & SPSS

Correlation analysis was done to determine the relationship between quality management system and operational risk management in banks in Palestine. The correlation matrix between QMS and each of the Operational risk dimensions is shown in above Table 4.13 The correlation matrix indicates that QMS and each of the operational risk dimensions are positively correlated. The correlation test results indicated that the customer focus (CF) and continuous improvement (CI) and Leadership Commitment had a strong correlation (0.620,

0.686,0.583) with effective operational risk (ORE) dimension. On the other hand, quality management dimensions had a good correlation with ORE dimension and was statistically significant to explain operational risk management, as p = 0.000 is less than 0.05 (level of significance). The practical operational risk had a weak correlation with quality management system dimension as p-value is greater than 0.05.

## **4.7.Hypotheses Testing**

This research aims at studying and investigating the effect of implementing QMS and operational risk in the banking sector. The two main hypotheses and seven sub-hypotheses were developed to study the relationship. The results indicate that there is a positive relationship between some dimensions in QMS and operational risk and that there are no effects from other QMS dimensions.

The main hypothesis to be tested in this study is as follows:

H1. There is no significant impact of Quality Management System (QMS) on the effectiveness of operational risk management.

Table 4.14: Regression Model of Effectiveness Operational Risk Management										
Constant & Variable	Unstandardiz	ed Coefficients	Standardized Coefficients	t	Sig.					
	В	Std. Error	Beta		C					
Constant	0.944	0.320		2.951	0.004					
Leadership Commitment (LC)	0.211	0.092	0.230	2.281	0.025					
Quality Information Availability & Usage (QI)	0.039	0.078	0.052	0.493	0.623					
Employee Training (ET)	0.018	0.103	0.023	0.173	0.863					
Employee Involvement (EI)	-0.046	0.081	-0.066	-0.563	0.574					
Process Design (PD)	0.006	0.103	0.007	0.055	0.956					
Customer Focus (CF)	0.214	0.097	0.238	2.205	0.030					
Continuous Improvement (CI)	0.354	0.111	0.380	3.198	0.002					
R: 0.740										
R-Square: 0.547										
F-Value: 16.217										
Source: Researcher's Computation										

Multiple linear regression analysis was done to determine the influence of predictor variables on the dependent variable. As shown in Table 4.14 above, seven independent variables, which were leadership commitment, Quality Information Availability & Usage, Employee Training, Employee Involvement, Process Design, customer focus and continuous improvement, explained **54.7%** percent of the variability of operational risk management. This indicated that **54.7%** percent of changes in effectiveness of operational risk management were explained by the seven predictor's variables and the remaining 45.3% percent was explained by other variables that were not considered.

# H1a. There is no significant impact of leadership commitment on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of the operational risk management perspective is used as the dependent variable, whereas leadership commitment was used as the independent variable. The output of the regression analysis is shown in Table 4.15.

Table 4.15 indicates that the standardized Beta coefficient for the path between leadership commitment and the effectiveness of operational risk management perspective is 0.583, with a t-value of 7.175. This statistically significant coefficient demonstrates that leadership commitment has a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.15: Regression Model of Leadership Commitment on Effectiveness Operational         Risk Management						
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	В	Std. Error	Beta		0	
Constant	2.063	0.299		6.908	0.000	
Leadership Commitment (LC)	0.535	0.074	0.583	7.175	0.000	
R: 0.583		·				
R-Square: 0.340						
F-Value: 51.481						
Source: Researcher's Computation	n					

The R-square value of 0.340 indicates that the variation in the independent variable (leadership commitment) explains nearly 34% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that leadership commitment positively affects the Effectiveness Operational Risk Management perspective is accepted.

# H1b. There is no significant impact of Quality Information Availability & Usage on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas Quality Information Availability & Usage was used as the independent variable. The output of the regression analysis is shown in Table 4.16.

Table 4.16 indicates that the standardized Beta coefficient for the path between Quality Information Availability & Usage and the effectiveness of operational risk management perspective is 0.419, with the t-value of 4.612. This statistically significant coefficient demonstrates that Quality Information Availability & Usage has a positively significant impact on the effectiveness of operational risk management perspective.

Table 4.16: Regression MEffective	odel of Qua ness Opera	llity Informat tional Risk M	ion Availability anagement	y & Usage	on
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		~-8
Constant	2.977	0.266		11.187	0.000
Quality Information Availability & Usage (QI)	0.311	0.067	0.419	4.612	0.000
R: 0.419					
R-Square: 0.175					
F-Value: 21.273					
Source: Researcher's Computation	1				

The R-square value of 0.175 indicates that the variation in the independent variable (Quality Information Availability & Usage) explains nearly 17.5% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Quality Information Availability & Usage positively affects the Effectiveness Operational Risk Management perspective is accepted.

# H1c. There is no significant impact of Employee Training on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas Employee Training is used as the independent variable. The output of the regression analysis is shown in Table 4.17.

Table 4.17 indicates that the standardized Beta coefficient for the path between Employee Training and the effectiveness of operational risk management perspective is 0.566, with a t-value of 6.859. This statistically significant coefficient demonstrates that Employee Training has a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.17: Regression Model	l of Employe Mana	e Training on agement	a Effectiveness	Operatior	nal Risk
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		0
Constant	2.514	0.247		10.171	0.000
Employee Training (ET)	0.443	0.065	0.566	6.859	0.000
R: 0.566			•		
R-Square: 0.320					
F-Value: 47.042					
Source: Researcher's Computatio	n				

The R-square value of 0.320 indicates that the variation in the independent variable (Employee Training) explains nearly 32% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Employee Training positively affects the Effectiveness Operational Risk Management perspective is accepted.

# H1d. There is no significant impact of employee involvement on the effectiveness of operational risk management

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas Employee involvement is used as the independent variable. The output of the regression analysis is shown in Table 4.18.

Table 4.18 indicates that the standardized Beta coefficient for the path between Employee involvement and the effectiveness of operational risk management perspective is 0.487, with a t-value of 5.573. This statistically significant coefficient demonstrates that Employee involvement has a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.18: Regression Model of Employee Involvement on Effectiveness Operational Risk         Management									
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t t	Sig				
	В	Std. Error	Beta	L L	515.				
Constant	2.976	0.221		13.438	0.000				
----------------------------------	-----------------	-------	-------	--------	-------	--	--	--	--
Employee Involvement (EI)	0.336	0.060	0.487	5.573	0.000				
R: 0.487									
R-Square: 0.237									
F-Value: 31.059	F-Value: 31.059								
Source: Researcher's Computation									

The R-square value of 0. 237 indicates that the variation in `the independent variable (Employee involvement) explains nearly 23.7% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Employee involvement positively affects the Effectiveness Operational Risk Management perspective is accepted.

# H1e. There is no significant impact of process design on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas process design is used as the independent variable. The output of the regression analysis is shown in Table 4.19.

Table 4.19 indicates that the standardized Beta coefficient for the path between process design and the effectiveness of operational risk management perspective is 0.510, with a t-value of 5.926. This statistically significant coefficient demonstrates that process design has

a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.19: Regression Model	odel of Proces Man	ss Design on H agement	Effectiveness O <sub>j</sub>	perational	l Risk
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B Std. Error Beta	-			
Constant	2.450	0.296		8.271	0.000
Process Design (PD)	0.439	0.074	0.510	5.926	0.000
R: 0.510					
R-Square: 0.260					
F-Value: 15.519					
Source: Researcher's Computation	on				

The R-square value of 0.260 indicates that the variation in the independent variable (Process Design) explains nearly 26% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Process Design affects positively the Effectiveness Operational Risk Management perspective is accepted.

# H1f. There is no significant impact of customer focus on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas customer focus is used as the independent variable. The output of the regression analysis is shown in Table 4.20.

Table 4.20 indicates that the standardized Beta coefficient for the path between customer focus and the effectiveness of operational risk management perspective 0.620, with a t-value of 7.896. This statistically significant coefficient demonstrates that customer focus has a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.20: Regression Mod	lel of Custom Man	er Focus on 1 agement	Effectiveness O	perationa	ll Risk
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		6
Constant	1.906	0.291		6.538	0.000
Customer Focus (CF)	0.558	0.071	0.620	7.896	0.000
R: 0.620					
R-Square: 0.384					
F-Value: 62.348					
Source: Researcher's Computation	on				

The R-square value of 0.384 indicates that the variation in the independent variable (Customer Focus) explains nearly 38% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Customer Focus positively affects the Effectiveness Operational Risk Management perspective is accepted.

# H1h. There is no significant impact of continuous improvement on the effectiveness of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The effectiveness of operational risk management perspective is used as the dependent variable, whereas continuous improvement is used as the independent variable. The output of the regression analysis is shown in Table 4.21.

Table 4.21 indicates that the standardized Beta coefficient for the path between continuous improvement and the effectiveness of operational risk management perspective is 0.686, with a t-value of 9.422. This statistically significant coefficient demonstrates that continuous improvement has a significant positive impact on the effectiveness of operational risk management perspective.

Table 4.21: Regression Model of Continuous Improvement on Effectiveness Operational Risk Management									
Constant & Variable	Unstanc Coeffi	lardized icients	Standardized Coefficients	f	Sig				
	B Std. Error		Beta	t	515.				

Constant	1.554	0.282		5.517	0.000				
Continuous Improvement (CI)	0.640	0.068	0.686	9.422	0.000				
R: 0.686									
R-Square: 0.470									
F-Value: 88.781									
Source: Researcher's Computation	Source: Researcher's Computation								

The R-square value of 0.47 indicates that the variation in the independent variable (Continuous Improvement) explains nearly 47% of the variation in the dependent variable (Effectiveness Operational Risk Management).

Therefore, the hypothesis that Continuous Improvement positively affects the Effectiveness

Operational Risk Management perspective is accepted

H2. There is no significant impact of quality Management System (QMS) on the practices of operational risk management.

Table 4.22: Regression Model of Effectiveness Practices Risk Management										
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.					
	В	Std. Error	Beta	·	515.					
Constant	2.110	0.393		5.373	0.000					
Leadership Commitment (LC)	0.372	0.113	0.413	3.281	0.001					
Quality Information Availability & Usage (QI)	-0.030	0.096	-0.041	-0.313	0.755					
Employee Training (ET)	-0.163	0.126	-0.211	-1.290	0.200					
Employee Involvement (EI)	0.079	0.100	0.116	0.793	0.430					
Process Design (PD)	-0.041	0.126	-0.048	-0.324	0.747					

Customer Focus (CF)	0.238	0.119	0.269	2.000	0.048		
Continuous Improvement (CI)	0.060	0.136	0.066	0.443	0.659		
R: 0.541							
R-Square: 0.293							
F-Value: 5.566							
Source: Researcher's Computation	on						

Multiple linear regression analysis was done to determine the influence of predictor variables on the dependent variable. As shown in Table 4.22 above, seven independent variables, which were leadership commitment, Quality Information Availability & Usage, Employee Training, Employee Involvement, Process Design, customer focus and continuous improvement, explained 29 percent of the variability in the Effectiveness Practices Risk Management. This indicated that 29 percent of changes in Effectiveness Practices Risk Management were explained by the seven predictor's variables and the remaining 71 percent was explained by other variables that were not considered.

# H2a. There is no significant impact of leadership commitment on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas leadership commitment is used as the independent variable. The output of the regression analysis is shown in Table 4.23.

Table 4.23 indicates that the standardized Beta coefficient for the path between leadership commitment and the Practices of operational risk management perspective is 0.493, with a t-value of 5.659. This statistically significant coefficient demonstrates that leadership

commitment has a significant positive impact on the Practices Risk Management perspective.

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Table 4.23: Regression Mode	el of Lea	dership Comm Management	itment on Practice	es Operatio	nal Risk
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		U
Constant	2.438	0.314		7.756	0.000
Leadership Commitment (LC)	0.444	0.078	0.493	5.659	0.000
R: 0.493				·	
R-Square: 0.243					
F-Value: 32.028					
Source: Researcher's Computat	ion				

The R-square value of 0.243 indicates that the variation in the independent variable (Leadership Commitment) explains nearly 24% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that Leadership Commitment positively affects the Practices Operational Risk Management perspective is accepted.

# H2b. There is no significant impact Quality Information Availability & Usage on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas Quality Information Availability & Usage is used as the independent variable. The output of the regression analysis is shown in Table 4.24.

Table 4.24 indicates that the standardized Beta coefficient for the path between Quality Information Availability & Usage and Practices of operational risk management perspective is 0.169, with a t-value of 1.710. This statistically significant coefficient demonstrates that Quality Information Availability & Usage has a significant positive impact on the Practices Risk Management perspective.

Г

Table 4.24: Regression MoPractices	del of Q s Operat	uality Inform ional Risk M	nation Availability & [anagement	: Usage o	n
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		~-8.
Constant	3.723	0.284		13.116	0.000
Quality Information Availability & Usage (QI)	0.123	0.072	0.169	1.710	0.090
R: 0.169					
R-Square: 0.028					
F-Value: 2.925					
Source: Researcher's Computation	on				

The R-square value of 0.028 indicates that the variation in the independent variable (Quality Information Availability & Usage) explains nearly 2.8% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that Quality Information Availability & Usage positively affects the Practices Operational Risk Management perspective is rejected

# H2c. There is no significant impact of Employee Training on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas Employee Training is used as the independent variable. The output of the regression analysis is shown in Table 4.25.

Table 4.25 indicates that the standardized Beta coefficient for the path between Employee Training and the Practices of operational risk management perspective is 0.288, with a t-value of 3.008. This statistically significant coefficient demonstrates that Employee Training has a significant positive impact on the Practices Risk Management perspective.

Table 4.25: Regression Model of Employee Training on Practices Operational RiskManagement										
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig.					
	В	Std. Error	Beta							
Constant	3.364	0.282		11.927	0.000					
Employee Training (ET)	0.222	0.074	0.288	3.008	0.003					
R: 0.169										
R-Square: 0.028										
F-Value: 2.925										
Source: Researcher's Co	omputation	1								

The R-square value of 0.028 indicates that the variation in the independent variable (Employee Training) explains nearly 3% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that Employee Training positively affects the Practices Operational Risk Management perspective is accepted.

# H2d. There is no significant impact of employee involvement on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas employee involvement is used as the independent variable. The output of the regression analysis is shown in Table 4.26.

Table 4.26 indicates that the standardized Beta coefficient for the path between employee involvement and the Practices of operational risk management perspective is 0.347, with a t-value of 3.696. This statistically significant coefficient demonstrates that employee involvement has a significant positive impact on the Practices Risk Management perspective.

Table 4.26: Regression Model of Employee Involvement on Practices Operational   Risk Management											
Constant & Variable	Unsta Coe	andardized efficients	Standardized Coefficients	t	Sig						
Constant & variable	В	Std. Error	Beta		~15.						

Constant	3.354	0.234		14.352	0.000				
Employee Involvement (EI)	0.235	0.064	0.347	3.696	0.000				
R: 0.347									
R-Square: 0.120									
F-Value: 13.659									
Source: Researcher's Computation									

The R-square value of 0.120 indicates that the variation in the independent variable (Employee Training) explains nearly 12% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that Employee Training positively affects the Practices Operational Risk Management perspective is rejected.

# H2e. There is no significant impact of process design on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas process design is used as the independent variable. The output of the regression analysis is shown in Table 4.27.

Table 4.27 indicates that the standardized Beta coefficient for the path between process design and the Practices of operational risk management perspective is 0.245, with a t-value of 2.528. This statistically significant coefficient demonstrates that process design has a significant positive impact on the Practices Risk Management perspective.

Table 4.27: Regr	ession Mo	odel of Process Manage	B Design on Practices Opera	tional R	isk					
Constant & Variable	Unst Coe	andardized efficients	Standardized Coefficients	t	Sig					
	В	Std. Error	Beta		0					
Constant	3.381	0.328		10.307	0.000					
Process Design (PD)	0.208	0.082	0.245	2.528	0.013					
R: 0.245					•					
R-Square: 0.060										
F-Value: 6.392	F-Value: 6.392									
Source: Researcher's	Computati	on								

The R-square value of 0.060 indicates that the variation in the independent variable (process design) explains nearly 6% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that process design positively affects the Practices Operational Risk Management perspective is rejected.

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# H2f. There is no significant impact of customer focus on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas customer focus is used as the independent variable. The output of the regression analysis is shown in Table 4.28.

Table 4.28 indicates that the standardized Beta coefficient for the path between customer focus and the Practices of operational risk management perspective is 0.383, with a t-value of 4.146. This statistically significant coefficient demonstrates that customer focus has a significant positive impact on the Practices Risk Management perspective.

Table 4.28: Regres	sion Mod	el of Custome Manager	r Focus on Practices Opera ment	tional F	Risk	
Constant & Variable	Unstandardized Coefficients		Standardized Coefficients	t	Sig	
	В	Std. Error	Beta			
Constant	2.816	0.337		8.353	0.000	
Customer Focus (CF)	0.339	0.082	0.383	4.146	0.000	
R: 0.383						
R-Square: 0.147						
F-Value: 17.190						
Source: Researcher's C	omputatio	n				

The R-square value of 0.147 indicates that the variation in the independent variable (customer focus) explains nearly 14.7% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that customer focus positively affects the Practices Operational Risk Management perspective is accepted.

### H2h. There is no significant impact of continuous improvement on the practices of operational risk management.

In order to test the above hypothesis, simple linear regression was used. The Practices Risk Management perspective is used as the dependent variable, whereas continuous improvement is used as the independent variable. The output of the regression analysis is shown in Table 4.29.

Table 4.29 indicates that the standardized Beta coefficient for the path between continuous improvement and the Practices of operational risk management perspective is 0.343, with a t-value of 2.921. This statistically significant coefficient demonstrates that continuous improvement has a significant positive impact on the Practices Risk Management perspective.

Table 4.29: Regression IV	Ri	isk Managem	ent	s Opera	uonai
Constant & Variable	Unsta Coe	andardized efficients	Standardized Coefficients	t	Sig.
	В	Std. Error	Beta		
Constant	2.712	0.349		7.762	0.000
Continuous Improvement (CI)	0.362	0.084	0.395	4.296	0.000
R: 0.395					
R-Square: 0.156					
F-Value: 18.458					
Source: Researcher's Comp	utation				

# Table 4.20: Pagression Model of Continuous Improvement on Practices Operational

The R-square value of 0.156 indicates that the variation in the independent variable (continuous improvement) explains nearly 15.6% of the variation in the dependent variable (Practices Operational Risk Management).

Therefore, the hypothesis that continuous improvement positively affects the Practices Operational Risk Management perspective is accepted.

## **Chapter Five: Conclusion, Recommendations and limitations**

#### **5.1.Introduction**

This chapter contains a summary of the findings and conclusion based on the research data analyses and literature review. It explains the limitations that were encountered when the research was being established, and it includes some of the recommendations and suggestions for implementing quality management systems in the banking industry to reduce operational risk.

### **5.2.**Conclusions

The research was carried out to determine the relationship between quality management systems and operational risk management in the banking sectors in Palestine. The data analysis shows there is currently minor implementation of quality management principles and operational risk management in Palestinian banks. While the study shows that some quality management principles are currently being implemented in the Palestinian banks, there is no full implementation of the quality management system principles. The research showed that there is leadership commitment in the banks and integration in the banks' mission for developing a quality management system in the services. The research showed that most Palestinian banks have information databases for work procedures and that the banks inform their employees on any changes or updates in work procedures. Given that, some banks do not ask their employees for feedback about the quality management system and work procedure and do not inform the employees about development processes for the quality management system. Most Palestinian banks use cross-function to design their processes and obtain customer needs to track it for design processes and services. The research showed that most Palestinian banks show strong attention to the customer focus principle, where the banks implemented all tools and techniques to gain the attention of their customers. The research exhibits that there is no clear criterion for measuring their customers' satisfaction with bank services. The research results also showed that the Palestinian banks give great attention to the continuous improvement process. The banks provide training for their staff. The banks utilize numerous tools and techniques to increase effectiveness and efficiency in their processes and services. The banks also utilize continuous monitoring for improvements in the processes, systems, and employees' skills. The research results display that there are effective policies and procedures for the implementation of operational risk management in most of the Palestinian banks. There is studying and analyzation present for these banks on operational risk incidents to determine root causes and treatment so that they do not occur again in the future.

In addition, the analysis correlation between variables showed that there is a positive correlation between the dependent variables and independent variables, while the regression analysis showed there is an effect on the leadership, customer focus and continuous improvement principle on the operational risk. Lastly, the regression analysis does not show the effect between the other variables on operational risk.

### **5.3. Recommendations**

- **5.3.1.**The leadership commitment is the most important QMS principle, the banks must be establishing many programs to build a new leadership for all levels of employees to lead organization to more activate the quality management principles and more control for operational risk.
- **5.3.2.** The senior management must engage all employees in the improvement process and development to determine the objectives of the banks to increase efficiency in fulfilling the banks' objectives and increasing employee satisfaction.
- **5.3.3.** The research recommends that to improve the implementation of quality management system in the Palestinian banks is to fully implement quality management system principles to reduce the operational risk and improve services and processes to reduce losses and cost when an incident risk occurs.
- **5.3.4.**Employee training for understanding and using a quality management system is very crucial to implementing a quality management system in the Palestinian banks to reduce operational risk losses.
- **5.3.5.**Quality culture is the most important, for the banks need to publish this factor in all employees and consider quality as a responsibility for all employees. Quality must be in all processes and not just in inspection or audit.
- **5.3.6.**The banks need to establish quality management policies to determine clear standards and measures for service, processes, and to tackle the customers' requirements and needs in banking services.

- **5.3.7.**Obtainment of customer requirements and needs to use when designing processes and services is important in determining measures and targets to execute the processes and services.
- **5.3.8.**Adoption of some improvement methodologies like Lean Management, Kaizen and Lean Six Sigma is important to improve processes and reduce operational risk losses.

### 5.4. Limitations of the Study

The most important limitation of this study is that some banks did not accept participating in the questionnaire and responding to it. This limitation may be effective in research results and in determining the relationship between variables, given that we obtained a limited number of questionnaires. Other limitations include employees' refusal and willingness to declare or inform other parties about operational risk in their bank, fearing for their jobs. Other limitations in this research also include the lack of quality culture and risk management culture because it has been newly applied in Palestinian banks. Lastly, the lack of specialized employees or departments is considered one of the limitations in this research and its effect on understanding the quality management principles in the banks.

#### REFERENCES

- Abuhav, I. (2017). *ISO 9001:2015 A Complete Guide to Quality Management Systems*. Boca Raton, FL: CRC Press.
- Andonov, S. (2017). *Quality-I is safety-II: The integration of two management systems*. Boca Raton: CRC Press.
- Anil, A. P., & Satish, K. P. (2016). Investigating the relationship between TQM practices and firm's performance: A conceptual framework for Indian organizations, Procedia Technology.
- Baidoun, S., & Zairi, M. (2003). A proposed model of TQM implementation in the Palestinian context, Total Quality Management & Business Excellence.
- Dentch, M. P. (2017). *The ISO 9001:2015 implementation handbook: Using the process approach to build a quality management system*. Milwaukee, WI: ASQ Quality Press.
- Deysher, B. (2015). A "Risk Based Thinking" Model for ISO 9001:2015. 1-42.
- Deutsche-bank. (2017). Retrieved from https://annualreport.deutsche-bank.com: https://annualreport.deutsche-

bank.com/2017/ar/servicepages/downloads/files/dbfy2017\_risk\_report.pdf

DQS. (2017). ISO 9001:2015 Quality Management System Assessment Checklist RP-2.

Management Systems Solutions, 1-38.

- Dragolea, L., Achim, M., & Fleser, M. (2011). Implementing of Quality Management In Banking Sector from Romania. *DAAM International*,22, 1-2.
- Duarte, P., Low, J. F., & Schiffauerova, A. (2018). Balancing risk and revenue: cost of quality within the banking industry. International Journal of Quality & Reliability Management, 35(10), 2181–2194. doi: 10.1108/ijqrm-06-2017-0106.
- Duh, R., Hsu, A.W., & Huang, P. (2012). Determinants and performance effect of TQM practices: An integrated model approach. Total Quality Management & Business Excellence.
- EqulPNational Resource. (2013). *Risk management and quality improvement handbook*. Ultimo, NSW: Australian Council on Healthcare Standards.

Al Arif, F., & Hinti, S. (2014). *Methods of quantifying operational risk in banks:* 

Theoretical approaches. AJER: AJER.

Islam, S., & Ahmed, M. D. (2012). Business process improvement of credit card department:

Case study of a multinational bank. *Business Process Management Journal*, 18(2), 284-303. doi:10.1108/14637151211225207

Iyida, Ifeanyi (2012), Total Quality Management in the Banking Industry A Case Study Of Zenith Bank Nigeria PLC.

Luburic, R. (2012). Synergistic Effects of Total Quality Management and Operational Risk

Management in Central Banks. *International Journal for Quality Research*,6 (4), 381-388.

- Kaynak, H. (2003). The Relationship between total quality management practices and their effects on firm performance. Journal of Operations Management.
- Kubal, R. (2011, January 13). ISO 9001 standard introduction: MindManager mind map. Retrieved from https://www.biggerplate.com/mindmaps/s765637/iso-9001standard-Introduction
- Kumar, R., Garg, D. and Garg, T. (2011), "TQM success factors in North Indian manufacturing and service industries", The TQM Journal.
- Marques, P., Requeijo, J., Saraiva, P., & Frazao-Guerreiro, F. (2013). Integrating Six Sigma with ISO 9001. *Emerald Insight*,4(1), 36-59. doi:10.1108/20401461311310508

Ng, S.C., Zhao, X., Fan, X. and Rungtusanatham, J.M. (2014), "TQM and brand-building by

- Chinese original brand manufacturers: impact on business performance", International Journal of Production Research.
- Nyaga, M. B. (2017). Quality Management and Operational Risk Management in Commercial Banks in Kenya. *University of Nairobi*, 1-65.
- Mehralian, G., Nazari, J. A., Nooriparto, G., & Rasekh, H. R. (2017). TQM and organizational performance using the balanced scorecard approach. International

Journal of Productivity and Performance Management.

- Paraschivescu, A. O. (2016). Risk Management and Quality Management an Integrate Approach. *George Bacovia University*, *19*, 55–61.
- Pinto, C. A., Magpili, L. M., & Jaradat, R. M. (2015). Operational risk management. New York: Momentum Press Engineering.

PMA. (2018, 03 05). PMA. Retrieved from http://www.pma.ps: http://www.pma.ps/Portals/1/Users/002/02/2/About%20PMA/Fact%20Sheet/Arabic \_FactSheet\_05-03-2018.pdf.

- Renzo, B. D., Hillairet, M., Picard, M., Rifaut, A., Bernard, C., Hagen, D., . . . Reinard, D. (2007). Operational risk management in financial institutions: Process assessment in concordance with Basel II. *Software Process: Improvement and Practice*, *12*(4), 321-330. doi:10.1002/spip.322
- Rungtusanatham, M., Forza, C., Koka, B.R., Salvador, F., and Nie, W., (2005) TQM across multiple countries: Covergence hypothesis versus national specify arguments. Journal of Operations Management.
- Rocha-Lona, L., Garza-Reyes, J. A., & Kumar, V. (2017). *Building Quality Management Systems*. Place of publication not identified: CRC Press.
- Ron Basu (2009), Implementing Six Sigma and Lean: A Practical Guide to Tools and

Techniques, Elsevier Ltd

Valmohammadi, C. (2011), "The impact of TQM implementation on the organizational performance of Iranian manufacturing SMEs", The TQM Journal.

Williams, R., Bertsch, B., Dale, B., Wiele, T. V. D., Iwaarden, J. V., Smith, M., & Visser,

R. (2006). Quality and risk management: what are the key issues? The TQM

Magazine, 18(1), 67-86. doi: 10.1108/09544780610637703.

## APPENDIX

## **Appendix I Questionnaire**

This research aims to study the relationship between the impact implementation quality management system for the operational risks in the Palestinian banking sector as an academic .research to obtain a master's degree in quality management from the Arab American University

## <u>''The Impact of Implementation Quality Management System and The</u> <u>Operational Risk in Palestinian Banking Sector".</u>

All information obtained will be strictly confidential and will be used for scientific research

We appreciate your interest and appreciate the time you have given us to fill out this questionnaire. The results and recommendations of this study will help banks operating in Palestine and your cooperation with us will contribute to the promotion of scientific research .in Palestine

1.	Age		Less T	'han			30 -	39			40 -49		[	□ More
		30												than 50
2.	Sex		Male								Female	;		
3.	Social		Single				Mar	ried			Divorced / Widowed			
	Status													
4.	Educational		Diplor	na		Ba	chel	or			Master			PH. D
	Level													
5.	Position		Manager		Assist	tant		Sup	ervis	or	□ Head C	f I		Employee
				Ma	anager						Division			
6.	Job		Quality		Risk				[nter	nal	🛛 Busine	SS		Others
			Management				Α	udit						
7.	Experience		Less Than 5			5 – 3	10 yea	irs		□ More	that	n 1	0 years	
	Years													

### Section One: Demographic Information

## Please answer the following paragraphs with a reference in the appropriate place.

## Section Two: Quality Management System

### 1) Leadership Commitment

		Strong Agree	Agree	Opinion	Disagree	Strong Disagree
1.	The bank has transparency in its mission and vision.					
2.	The development of the quality system is a fundamental part of the Bank's mission					
3.	Senior management creates a positive environment in the organization to improve quality.					
4.	The bank has sufficient financial resources to develop quality.					
5.	Senior management aims to improve the quality system in the long term					

### 2) **Quality Information Availability & Usage**

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	all employees are informed of the quality					
	standards approved and required					
2.	all employees are informed about any					
	changes or modifications in the work					
	procedures, regulations and regulations					
	on an ongoing basis.					
3.	there is an effective and accurate					
	database on the costs of funds, deposits					
	and financing pricing.					
4.	Employees provide feedback to the					
	management on the progress of the					
	Bank's quality development process.					

### 3) Employee Training

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	there are criteria for assessing employees on appointment (e.g. education, skills, experience).					
2.	The Bank will train new employees in the work skills.					
3.	Staff are trained on the principles and concepts of quality management.					
4.	The Bank evaluates the effectiveness of training provided to employees.					
5.	The training programs offered by the Bank to its employees are consistent with its objectives.					
6.	The Bank evaluates employee satisfaction with the training offered to them.					

## 4) Employee Involvement

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
_						
1.	The employees are involved in the					
	process of quality development in the					
	organization of each location.					
2.	There is a commitment of staff to the					
	success of the institution					
3.	The Bank actively seeks to encourage					
	staff to work in a team spirit					
4.	The Bank works to develop the spirit of					
	innovation and creativity among its					
	employees in order to achieve its					
	objectives					

## 5) <u>Process Design</u>

		Strong Agree	Agree	Opinion	Disagree	Strong Disagree
1.	Business Process, take the needs of your customers into consideration.					

2.	work procedures are clear to employees.			
3.	Cross-functional teams are used to			
	design processes.			
4.	Business Process are constantly			
	developed and adapted to quality			
	standards and strategies.			
5.	The Bank provide staff with leaflets			
	explaining the work procedures			

## 6) <u>Customer Focus</u>

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	There are clear criteria for measuring					
	customer satisfaction with the services					
	provided by the Bank.					
2.	The bank conducts market studies to					
	determine customer requirements.					
3.	The bank receives customer complaints					
	and works to address them					
4.	The bank has a VIP corner for VIP					
	clients					
5.	The Bank always strives to meet current					
	and future customer needs					
6.	The bank aims to implement service to					
	its customers as quickly as possible					
	(Service Time)					

## 7) <u>Continuous Improvement</u>

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	Your bank is working to compare its products with the best in the market					
2.	Your bank is constantly empowering and training staff					
3.	Your bank encourages employees to brainstorm on how to improve systems and processes.					
4.	Errors are learned and improvements are made					
5.	The process of continuous improvement helps reduce operational risks					

6.	Staff training is one of the ways to			
	minimize operational risk			
7.	The Bank continuously monitors			
	operational risks in order to improve			
	processes, systems and staff training.			

### Section Three: Operational Risk

### 1. The effectiveness of Operational Risk

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	The bank holds training workshops for its employees explaining ways of dealing with operational risks					
2.	There is a written and clear operational risk policy in your bank.					
3.	The bank is applying operational risk management techniques such as loss root cause analysis and scenario analysis in decision making activities.					
4.	The bank discloses annual operational risk report.					
5.	The Bank discloses the operational risk report through the Risk Committee of the Board of Directors					
6.	The bank uses scenario analysis and inspection in reducing operational risk.					
7.	Understanding business environment and internal process control is considered the main factors in enhancing the effectiveness of risk management.					
8.	The bank is usually using risk and control–self assessment in dealing with operational risks.					

### 2. OPERATIONAL RISK MANAGEMENT PRACTICES SUITABLE

		Strong	Agree	Opinion	Disagree	Strong
		Agree				Disagree
1.	Analyzing operational failures and					
	sharing lessons learnt with all staff					
	would help to prevent failures in future					
2.	Allowing staff to give ideas on how to					
	continuously improve processes, systems					
	would improve on quality performance.					

3.	Senior management should be committed to a quality performance-oriented culture across bank to manage operational failures			
4.	Bank should have teams that deal with quality performance issues such as poor customer service and responds quickly to improve.			
5.	Bank should continuously monitor operational failures in order to improve processes, systems and up skilling of staff.			

Bank Name	# Of Employee Quality, Risk, Audit	Establish Year	Headquarters	Туре
Palestine Islamic Bank	9	1995	Palestine, Ramallah	Local Bank
Arab Islamic Bank	20	1995	Palestine, Ramallah	Local Bank
Quds Bank	15	1995	Palestine, Ramallah	Local Bank
Arab Bank	15	1994	Palestine, Ramallah	Foreign Bank
Bank Of Palestine	22	1960	Palestine, Ramallah	Local Bank
Palestine Investment Bank	6	1995	Palestine, Ramallah	Local Bank
National Bank	7	2012	Palestine, Ramallah	Local Bank
Safa Bank	7	2016	Palestine, Ramallah	Local Bank
Cairo Amman Bank	19	1986	Palestine, Ramallah	Foreign Bank
Bank of Jordan	10	1994	Palestine, Ramallah	Foreign Bank
Housing Bank for Trade and Finance	10	1996	Palestine, Ramallah	Foreign Bank
Jordanian Ahliy Bank	7	1995	Palestine, Ramallah	Foreign Bank
Egyptian Arab Land Bank	7	1994	Palestine, Ramallah	Foreign Bank
Commercial Bank of Jordan	6	1995	Palestine, Ramallah	Foreign Bank

## **Appendix II List of Banks in Palestine**

#### ملخص الدراسة

الغرض من هذه الدراسة هو دراسة تأثير وعلاقة تطبيق نظام إدارة الجودة (QMS) على إدارة المخاطر التشغيلية للبنوك العاملة في فلسطين. حيث تعتبر المخاطر التشغيلية في البنوك الجزء الأكبر من جميع المخاطر التي تنطوي عليها الصناعة المصرفية حيث ان البنوك تستخدم أدوات عديدة لتخفيف وإدارة المخاطر التشغيلية. من ناحية أخرى، يمكن لتطبيق نظام إدارة الجودة في البنوك تحسين الأداء وزيادة الكفاءة وزيادة الفعالية في العمليات والخدمات وتقليل تأثير المخاطر التشغيلية.

لاستكشاف العلاقة بين نظام إدارة الجودة والمخاطر التشغيلية، تم استخدام الأساليب النوعية. تم تطوير استبيان وتوزيعه على 14 بنكا تعمل في فلسطين لجمع البيانات. وتم عمل تحليل للبيانات باستخدام الإحصاءات الوصفية وتحليل الانحدار لتقييم واختبار الفرضيات البحثية.

يقوم البحث بتقييم نضبج تطبيق مبدأ نظام إدارة الجودة في البنوك وتنفيذ ممارسات المخاطر التشغيلية في البنك. تشير النتائج الرئيسية إلى وجود علاقة إيجابية وهامة بين بعض أبعاد نظام إدارة الجودة والمخاطر التشغيلية، مثل التزام القيادة، وتركيز العملاء، والتحسين المستمر، ويظهر البحث تأثيرًا قويًا بين مبادئ نظام إدارة الجودة (التزام القيادة، التركيز على العملاء ومتغيرات التحسين المستمر) وإدارة المخاطر التشغيلية، باستثناء بعض المبادئ بسبب وجود بعض القيود في هذه الدراسة.

بالنظر إلى نتائج البحث والعلاقة الإيجابية لنظام إدارة الجودة على المخاطر التشغيلية، قد تكون إدارة البنوك الفلسطينية أكثر ثقة وتشجع على تطبيق وتبنى نظام إدارة الجودة.

يعتبر هذا هو أول بحث تجريبي درس تأثير تطبيق نظام إدارة الجودة على المخاطر التشغيلية من خلال الجمع بين نظام إدارة الجودة والمخاطر التشغيلية في القطاعات المصرفية الفلسطينية حيث توصى الدراسة قيام البنوك بتطبيق مبادئ نظام إدارة الجودة لتحقيق الأداء العالي من خلال تقليل المخاطر التشغيلية وزيادة الكفاءة والفعالية والذي يشكل تأثيرا إيجابيا على البيئة التنظيمية للبنوك ويقلل المخاطر التشغيلية. الكلمات المفتاحية: نظام إدارة الجودة، مبادئ إدارة الجودة، إدارة الجودة الشاملة، ستة سيجما، الإدارة الرشيقة، إدارة المخاطر، إدارة المخاطر التشغيلية، قطاع البنوك، فلسطين.