

**THE IMPACT OF KNOWLEDGE MANAGEMENT AND
TOTAL QUALITY MANAGEMENT ON STAFF EFFICIENCY
AND ON THE PERFORMANCE OF THE COMPANY**

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**IŞIK UNIVERSITY
SEPTEMBER, 2022**

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THE COMPANY

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Işık University, School of Graduate Studies, Master of Business Administration,
2022

Submitted to the Graduate School of Science
In partial fulfillment of the requirements for the degree of
Master of Business Administration

IŞIK UNIVERSITY
SEPTEMBER, 2022

IŞIK UNIVERSITY
SCHOOL OF GRADUATE STUDIES
MASTER OF BUSINESS ADMINISTRATION

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APPROVAL DATE: 31/08/2022

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ABSTRACT

Today, knowledge management and total quality management are becoming necessary in all industrial fields. However, systems and management procedures are becoming increasingly complex. Thus, industrial managers encounter several difficulties, either in terms of choice, or in terms of deployment and application of performance measurement approaches and techniques adapted to their field.

In this regard, this work comes to support researchers in further future studies to gain insight into the impact of knowledge management and total quality management on staff efficiency and on the performances of the company and to have the knowledge about the most commonly used approaches and methods to measure staff efficiency and company's performances. Based on the literature review and the questionnaire we did to review company's behaviors concerning our purpose and after collecting data and analyzing 50 answers from 300 companies surveyed, we did succeed to identify our hypotheses based on perceptions of managers and agents working on different services in the company.

Five hypotheses are defined as:

- Knowledge management has a positive Impact on staff efficiency.
- Total quality management has a positive Impact on staff efficiency.
- Knowledge management has a positive Impact on the performance of the company.
- Total quality management has a positive Impact on the performance of the company.
- Staff effectiveness has a positive Impact on the performance of the company.

Hypothesis and model are made to be tested in future studies by researchers on a purpose of arriving at a scientific model eligible to be used by companies to increase their performance. Also, to help companies to build a strong work infrastructure by giving more importance to the concept of knowledge management and total quality management and by integrating the most used performance indicators based on our

perceptions analyses which are: Balanced Scorecard, supply-chain operations reference and human performance improvement.

Keywords: Total Quality Management, Knowledge Management, Staff Efficiency, Performance of the Company.

BİLGİ YÖNETİMİ VE TOPLAM KALİTE YÖNETİMİNİN PERSONEL VERİMLİLİĞİ VE ŞİRKET PERFORMANSI ÜZERİNDEKİ ETKİSİ

ÖZET

Günümüzde bilgi yönetimi ve toplam kalite yönetimi gibi unsurlar tüm endüstriyel alanlarda gerekli hale gelmektedir. Bununla birlikte, sistemler ve yönetim prosedürleri giderek daha karmaşık hale gelmektedir. Bu nedenle, endüstriyel yöneticiler, kendi alanlarına uyarlanmış performans ölçüm yaklaşımları ve tekniklerinin seçimi veya yaygınlaştırılması ve uygulanması açısından çeşitli zorluklarla karşılaşabilmektedir.

Bu bağlamda, çalışmamdaki en önemli amaç, bilgi yönetimi ve toplam kalite yönetiminin personel verimliliği ve şirket performansları üzerindeki etkisine ilişkin fikir edinmek ve en yaygın kullanılan yaklaşımlar ve yöntemler hakkında bilgi sahibi olmak için gelecekte yapılacak personel verimliliğini ve şirket performanslarını ölçme ile ilgili araştırmaları yapan araştırmacıları desteklemek gelmektedir.

Literatür taraması ve amacımızla ilgili olarak şirket(ler)in davranışlarını incelemek için yaptığımız ankete dayanarak ve bu anketlere katılan 300 şirketten ilgili verileri toplayıp, 50 doğru yanıt vermiş olduğuna inandığımız şirketlerin verilerini analiz ettikten sonra, farklı şirketlerde ve hizmetlerde çalışan yönetici ve temsilcilerin algılarına dayalı hipotezlerimizi belirlemeyi başardık.

Beş Hipotez Şu Şekilde Tanımlanmıştır:

- Bilgi yönetiminin personel verimliliği üzerinde olumlu etkisi vardır.
- Toplam kalite yönetiminin personel verimliliği üzerinde olumlu etkisi vardır.
- Bilgi yönetiminin şirketin performansı üzerinde olumlu bir etkisi vardır.
- Toplam kalite yönetiminin şirket performansı üzerinde olumlu etkisi vardır.
- Personel verimliliğinin şirketin performansı üzerinde olumlu bir etkisi vardır.

Bu hipotezleri kullanarak, bilgi yönetimi ve toplam kalite yönetimi arasındaki bağlantıları ve bunların personel verimliliği ve şirket performansı üzerindeki etkilerini içeren çalışmamız için örnek bir model oluşturduk.

Ayrıca, bilgi yönetimi ve toplam kalite yönetimi kavramlarına daha fazla önem vererek ve algı analizlerimize dayalı olarak en çok kullanılan performans göstergelerini, Balanced Scorecard, tedarik zinciri operasyonları referans ve insan performansının iyileştirilmesi. Ayrıca şirketin performansını ölçmek için kullanılacak her yöntemin özelliklerini belirleyerek personel verimliliği ve performansı açısından en üst düzeyde iyileştirme ve elde etmek.

Anahtar Kelimeler: Toplam kalite Yönetimi, Bilgi Yönetimi, Personel Verimliliği, şirket Performansı.

ACKNOWLEDGEMENT

“I would like to thank the following people, without whom I would not have been able to complete this research, and without whom I would not have made it through my master’s degree.

Foremost, I would like to express my sincere gratitude to my advisor Assoc. Prof. Dr. Y. Pinar Soykut Sarica for the continuous support of my master study and research, for his patience, his precious support and his creative comments kept me motivated to always strive for better. Her motivation, enthusiasm, immense knowledge, and guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my master study. I am grateful for my parents whose constant love and support keep me motivated and confident. My accomplishments and success are because they believed in me. Deepest thanks to my siblings Souhail and Alaeiddine, who keep me grounded, remind me of what is important in life, and are always supportive of my adventures. Finally, I owe my deepest gratitude to Oumayma, who is my love. I am forever thankful for the unconditional love and support throughout the entire thesis process and every day. Last but not least Last, I want to thank me, I want to thank me for believing in me and for doing all this hard work without quitting. Thank you.”

Miled KAMOUN

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LIST OF ABBREVIATIONS

TQM: Total Quality Management

KM: Knowledge Management

SCM: Supply Chain Management

SC: Supply Chain

HRM: Human Resource Management

SE: Staff Efficiency

CMMI: Capability Maturity Model Integration

DA: Descriptive Analysis

DS: Descriptive Statistics

FA: Factor Analysis

CHAPTER 1

1. INTRODUCTION

Among the ways to achieve economic excellence, technological innovation and customers satisfactions alongside the search for a high level of the company performance. This performance, often called operational excellence, is based on the structure of the company, as well as several elements in the latter. The performance of the company also allows the organization to develop and increase the brand name. The evolution of these logistics chains and the criteria for evaluating their performance generates a questioning of the instrumentation and piloting methods used until then. The definition and implementation of performance indicators pose many issues related in particular to the evolution of the concept of performance. The different elements of performance have a strong relationship with knowledge and know-how, in other words with the knowledge acquired by the actors of the SC. In general, Knowledge management occupies an important place in the economic and social environment. For this reason, several companies are seeking to differentiate themselves through this new concept, since it has become one of the main goals of every organization. These organizations must manage well their financial, material and information flows and likewise their knowledge flows. However, any organization seeks to be reliable, efficient, responsive, sustainable, etc. So, and to achieve these facets of performance, the organization must manage its knowledge well. In Consequently, this level of management allows companies to develop at all levels, because those who manage their knowledge well, both explicit and implicit, can ideally manage their resources. Nevertheless, and given the great diversity of the fields and professions involved in organization, the large amount of knowledge elements to be implemented requires a good management, so that every item is delivered exactly and at the right time. To achieve this, a Knowledge Based System can be of great use.

Indeed, knowledge management is part of a new management approach which seeks continuous improvement in all supply chain processes. It touches all phases of the product life cycle and requires the involvement of all employees in all departments: this is about total quality management. In this context, we can define Total Quality Management, as an approach of quality management; the objective is to obtain a very broad mobilization and involvement of all staff to achieve perfect quality while minimizing waste and continuously improving the outputs. It seeks to manage client's satisfactions, staff, managers, shareholder, subcontractors or suppliers and the community. Successful implementation requires management and exemplary leadership to create the much needed effect.

In addition, the TQM will mark its importance to the company more than any other management system since it is based on recognized theories and practices. It is based on proven principles that are considered as general rules to be followed, without which its establishment and improvement become almost impossible. Under these conditions, employee efficiency is necessary to properly implement these two management philosophies, namely KM and TQM and achieve the performance of the Supply Chain. It is essential that the personnel of companies have a level specific intellectual, continuous training to follow technological developments and information, satisfaction and a balanced work environment, integration and reciprocal interaction, etc. In this regard, several researchers have dealt with the issue that studies the factors and elements of personnel effectiveness that can achieve performance SCs in various industrial sectors. Also, others have studied the impact and influence of knowledge management and total quality management on this efficiency.

But what still remains unclear what is the impact of knowledge management and total quality management on staff efficiency and on the performance of the company? This question summarizes the problematic of our research work.

Thus, the objectives of this thesis are, on the one hand, to define the nature of the concepts cited above. On the other hand, to create hypothesis focused on the impact of the knowledge management and total quality management on staff efficiency and therefore on the performance of the company.

To better understand this issue, we have identified the main determinants of our study namely; the elements of knowledge management, total quality management practices, characteristics of staff effectiveness. That helped us to create our questionnaire which is our main thesis methodology.

This questionnaire will be distributed to different international companies covering the majority of industrial sectors. After this broadcast, responses will be collected and analyzed, which will be resulted in the identification and the arriving of our main hypothesis.

The examination of this questionnaire made it possible to produce our hypothesis and our conceptual model based on the identification of perceptions and ideas of the companies surveyed.

This work then comprises five chapters:

- The first chapter presents the introduction of our theses including a summary of the problematic and the methodology provided in our research.
- The second chapter presents the concept of total quality management, through its issues, its practices and its limits. The difficulties of implementing total quality management, its objectives and its benefits are then discussed. Secondly, we interpreted the term of knowledge management, its challenges and its implementation issues in organizations. Subsequently, we revealed the importance of resource management human resources to improve the work environment and to maintain management systems implemented in companies. Finally, we exposed the performance of the company, its dimensions, as well as a presentation of its measurement methods and evaluation.
- The third chapter represents our literature review; we analyzed the relationship between the following concepts: knowledge management, total quality management, staff efficiency, the company performance. Also, we identified the impact of knowledge management and total quality management on staff efficiency and on the performance of the company based on results of related articles and thesis that we studied.
- The fourth chapter represents our research methodology; we identified our problematic and our methodology.

- Also, we explained the survey, the presentation of the sample, the methodology of data collection, etc. In addition, the methods of processing and analyzing this data have been also expressed. Finally we highlighted the analysis of the results obtained from our questionnaire to clarify and identify the links and relationships between our decision-making variables, approving impacts between them and to finally arrive to create our hypotheses and to design our conceptual model and to identify the strategies to be implemented to maximize the performance of personnel and the performance of the company.
- The final chapter identifies our main research results in summary. Also presents our study limits that will require future research and research recommendation that includes some perspectives and avenues of research that can be added.

CHAPTER 2

2. POLICY DIVERGENCE AND TRADITIONAL RESEARCH

2.1 Introduction

The performance of the company depends on several factors besides its type and performance of its actors. Thus, managing a logistics chain comes down, among other things, to managing employees, knowledge, various resources and also implements new concepts of management. In addition, supply chain management always seeks to improve its performance through the collaboration of all stakeholders and their integration into all the processes of the organization. However, human resource management has often had direct effects on the performance of supply chains or on the results of business performance indicators in general. For this, several researchers have discussed and tried to evolve the course of management systems in the companies, like TQM and KM, in order to make better results.

In this chapter, we first present the concept of quality management total, through its challenges, practices and limits. Also, we will talk about the difficulties of its implementation, its objectives and its benefits. Secondly, we interpret the notion of knowledge management, its challenges and issues implementation in organizations. Subsequently, we reveal the importance of human resource management to improve the work environment and manage systems management systems implemented in companies, In this context, we expose the notion of performance of the logistics chain, its dimensions, as well as a brief presentation of its measurement and evaluation. Finally, we present a literature review dealing with the connexion between KM and TQM. Then, we identify their impacts on the efficiency of the staff and the performance of the SC with reference to recent work.

2.2 Total Quality Management

2.2.1 Definition

In the literature review, we find a large number of meanings linked to the notion of TQM total quality management. Some of these definitions are presented below.

TQM is a company philosophy that entails all employees contributing to the creation of value for the client. It's a vital approach utilized by human resources to preserve a competitive advantage, as well as a way to help organizations to achieve exceptional status by improving overall efficiency and performance. It's also a senior management-led process for obtain the participation of all employees in the improvement continuous performance of all activities. TQM is an organizational strategy aimed at improving performance by providing high quality products / services quality (Samawi, 2018).

TQM is an organizational management system that attempts to satisfy consumers by understanding their voice and applying it to the design of production/service processes to develop a product/service that best fulfills their demands (Srima, 2015).

- This diversity of definitions shows the TQM as a management strategy for enhancing organizational performance that includes both technological and behavioral issues. Additionally, implementing its principles helps organizations learn methods to improve productivity. In addition, the diversity of dimensions of TQM reflects a wide range of organizational culture traits to establish an organizational structure and culture that promotes innovation.

2.2.2 TQM Practices

TQM's techniques have piqued the interest of a number of firms and experts from a variety of industries for years. Companies who want to improve their chances of survival by incorporating quality and continuous improvement into their strategic priority have adopted these techniques. Indeed, these procedures are followed in order to implement a set of management concepts and techniques targeted at incorporating managers and employees in the pursuit of continuous performance improvement (Kahre, 2014).

-The most important TQM practices are six in number:

2.2.2.1 Leadership and Management Commitment

The concept of leadership is defined as any form of influence process or act that motivates individuals to do something. Leadership behaviors, such as the employment of strategies to influence colleagues, can promote or decrease employee engagement through shocks, which have a significant impact in influencing employee leave, despite their usually favorable attitude at work. As a result, leadership is regarded as a critical component of any organization. In this setting, TQM must begin at the top, with a commitment to quality and leadership exhibited, albeit middle managers also play an important role in message communication. However, one of the most important challenges that businesses confront is a lack of support management, which becomes one of the reasons for their failure. As a result, they stress the need of senior management taking responsibility for quality by providing active leadership through a well-defined and focused strategy and fostering the growth of customer-oriented service. (Banuro, 2017).

2.2.2.2 Client Orientation

TQM emphasizes process improvement, participation of all customers, teamwork, training and education of clients' needs in order to achieve their satisfaction by lowering costs and providing flawless work. This orientation is a practical approach to attracting and retaining customers, meeting their needs changing and essential (Kumar, 2017).

This is why (Honarpour, 2018) define it as customer-centric practices that make information available essential about their needs and that trigger new ideas to meet these last. Also states that customer orientation measures the degree to which the organization recognizes the needs of its customers and takes appropriate measures, ensuring their satisfaction, deals with their complaints and offers any type of after- sales or recovery service. As for, without customer orientation, the TQM program would not have the basis for further development.

2.2.2.3 Human Resource Management

Human Resources Management (HRM) is a system performance management plan that initially links organizational goals through a goal setting process, and then

the achievement of employee goals set a variety of HRM decisions through a performance measurement process. In addition, HRM as the structure of deployments planned human resources and activities intended to enable the company to achieve its goals. It measures employee involvement, motivation and satisfaction as well as maintaining a peaceful and pleasant work environment that encourages improving quality. HRM was a simple management of personnel which even entails the burden company finance (Zhao, 2017).

2.2.2.4 Process Management

TQM starts with the notion that all employees must work together to effectively manage and master their organization's critical processes. The procedure management process requires effective and efficient control of all each process and also the perfect identification of dysfunctions. In general, process management relies heavily on management methods such as monitoring a set of performance indicators capable of helping managers make decisions strategic or also operational depending on the nature of the dysfunctions. In addition, to manage its processes, TQM relies not only on quality tools and techniques, but also on a set of values and principles shared by all members of the business (Gharakhani, 2013).

In addition, the knowledge and practices of successful process management control the quality data to manage processes efficiently. In this way, the figure rate business improves, process errors are corrected on time and the results of performance indicators are rising. If the processes become prevention oriented, the costs are reduced and the benefits of organizations are increasing. Nevertheless, the quality systems have been gradually evolved and transformed in an evolutionary process, starting with a clear focus on production control techniques, and progress towards broader and more complex, such as statistical process control and assurance programs of quality. In other words, the implementation of TQM involves obtaining stability between the compliance with customer needs and improvement of internal processes, without reducing the flexibility and inventiveness of operation. This is why organizational excellence is connected to good process management to ensure that the processes are linked with the strategic objectives of the organization (Honarpour, 2018).

2.2.2.5 Information Analysis

Companies are frequently urged to learn and gain useful skills, goods, technology, and expertise through value-added activities. At the same time, partner companies are encouraged to keep their information and their proprietary core skills. The information analysis interprets the assessment of various policies and strategies, quality auditing, quality and function cost analysis and evaluation employee and supplier performance.

As the most essential approach for validating continuous improvement, monitoring processes, analyzing and correcting deviations from needed standards, information analysis measurement aids in assessing the quality of processes and products / services. Likewise, the quality data, which can be analyzed, are taken into account by managers in the planning and control process. In addition, he proposes the use of information systems allowing the production of timely information, making it an essential tool for managers who struggle in highly competitive environments. (Psomas, 2017)

The use of KM in an operational setting is advantageous since the data gathered may be used strategically in future planning, such as new product/service designs. From there, management should design a particular procedure for selecting ideas, as companies that make their decisions on data analysis and information fare better than their counterparts who do not. Therefore, it ensures that you have enough data and information on the performance and operations of processes, customers, suppliers and others stakeholders would help the organization and its employees to continuously improve their decisions and actions in the production and delivery of goods / services meeting standards and the requirements (Attrietal, 2017).

2.2.2.6 Continuous Improvement

Continuous improvement consists of regularly evaluating and improving products, services and processes. In this context, TQM is a dynamic process capable of improving workflows in order to advance the performance of organizations, where leaders act to achieve continuous improvement by making small changes instead of drastic changes. This process includes the use of methods, the presence of statistical analyzes and controls, and also the documentation of critical standard processes.

Also, quality improvement should be driven by teamwork to all departments of the organization. If, this work is carried out on a regular basis then it enables the dissemination of information, the resolution of problems and the increase of employee responsibilities in managing quality performance (Oliveira, 2019).

In conclusion, continuous improvement is about increasing results and the ability to produce better results, as well as enhancing strategic planning and high-level decision-making in the workshop's detailed execution of work items. It is essentially based on process management which should be supported by top management to resolve any work issue that occurs, so as continuous improvement is the core of TQM, the latter must deliver superior value for quality to customers and meet customer needs that should be a popular guide for organizational management (Mohammed, 2017).

2.2.3 Challenges and Limits

The TQM approach can be seen as a set of improvement actions to the various processes of the organization. This approach is concerned with all the processes in a business. In addition, ISO 8402 defines TQM as "a mode of management of a organization, centered on quality, based on all members' engagement, and aiming for long-term prosperity through customer satisfaction It benefits all members of the organization as well as society as a whole." TQM, in particular, has been proved in several studies to improve supply chain performance. If it is effectively practiced. This results in lower production costs while increasing productivity and employee satisfaction at work and minimizing their conflicts (Samawi, 2018).

According to (Duran et al, 2014), the TQM can effectively modify processes if it employs the following strategies:

- Reshape the organization's culture,
- Implement participative management by focusing on the organization's goals,
- All personnel should be educated and trained,
- Ensure continual improvement by concentrating on the company's overall goals rather than particular practices while enhancing procedures,
- Boost communication to help with improvement.

- Establish strong connection with suppliers and customers, focusing on quality product development and purchasing policies rather than pricing, to identify and satisfy internal and external customers,
- In processes, measure and show products and data,
- Employees should be supported and strengthened in all aspects of quality.

TQM programs, on the other hand, frequently fail owing to a lack of quality control, which is required to monitor crucial elements such as customer satisfaction, supplier quality, and employee quality. Many firms struggle to grasp the notion of TQM in terms of knowing what should be implemented and where they should focus their efforts. Furthermore, inefficient training, insufficient employee participation, insufficient senior management support, poor communication and planning, incorrect resource usage, poor culture quality, and resistance to change were the key factors for the failure of TQM adoption in a company (Oliveira, 2019).

2.2.4 Objectives of Implementation of TQM

To facilitate changes and offer the resources needed for continuous improvement, TQM techniques require an organizational environment that encourages open communication and employee participation. Successful quality management requires firms to have the independence, autonomy, and breadth of abilities required to engage in creative and effective continuous improvement activities that encourage the adoption of a systematic and standardized approach to issue solving. Clearly, implementing TQM necessitates the implementation of a set of suggestions ranging from human resource management to supplier management. However, enhancing its execution is a direct result of self-efficacy and personal confidence, rather than the corporate culture of support, transferring the impact of the group culture to TQM (Kumar, 2017).

However, the objective of TQM is to cost effectively deliver goods / services to the customer at a satisfactory level. Thus,(Li, 2010)promise that when customer satisfaction is placed at the core of the organization, the commercial operations' focus becomes the knowledge of how to offer the right items at the right quality and deliver the products at the right time and in the right location. On the other side, it demonstrates that TQM's primary purpose is to foster an organizational culture of trust and collaboration. Employee participation is encouraged, as is the determination

of individual goals in this culture. It also helps to improve the organizational process by encouraging quality, knowledge generation, transfer, and sharing, all of which help to encourage innovation. TQM is also a technique to improve the company's efficiency, adaptability, and competitiveness in order to satisfy client requirements, as well as a way to help develop a supportive atmosphere and culture innovation (Banuro, 2017).

2.2.5 The Benefits of TQM

Like any management system, TQM has several benefits, both at the level external citing stakeholder relationships, either internally with regard to HRM, continuous improvement, etc. The majority of organizations implementing TQM have benefited in various ways from the performance from product quality to financial performance. Also, TQM has various advantages such as improving productivity, efficiency, employee morale, share of market, quality, cost savings, financial return, performance of employees and other competitive advantages.

According to the international organization for standardization ISO 9000, TQM can increase the satisfaction of customers, deliver cost and risk management benefits, and improve competitiveness. In Overall, companies whose initial application of TQM was customer-driven or strategy-driven have maintained their momentum in these areas while adding efficiency increased operational efficiency as a benefit of TQM (McAdam R., 2012).

In addition, many businesses have concluded that implementing TQM effectively can improve their competitiveness and create strategic advantages in the global market. Customer loyalty, lower production/service costs, well-trained and motivated employees, satisfied shareholders, and favorable recognition were all mentioned as advantages (Gul, 2012).

2.2.6 Disadvantages / Problems of TQM

Whatever the benefits of TQM, we cannot deny the existence of problems related to its implementation. These issues can be related to the lack of usage of human resources, financial and information, the lack of awareness of senior management, the strong competition and changing customer needs, etc.

The main obstacles related to TQM practices emerged are names bellow:

- Failure to integrate quality management into every department.
- Workforce resistance; insufficient use of empowerment and work teams.
- Employee participation is low; there is a lack of training and proper preparation.
- For the implementation, the company's structure or culture of oversight is insufficient.
- TQM; Lack of involvement and commitment from senior management.
- TQM practices are not well understood.
- Managerial resistance for learning and change.
- Inability to create a learning organization capable of long-term improvement.
- Poor planning and management.
- Inappropriate remuneration scheme.

In this regard, (AdrianaTisca, 2015) state that in case of the implementation of the system of quality management, the first risk that may exist is the choice of the consulting firm, because if the consultant you choose is inexperienced, it can create more problems than benefits. In addition and following the work of the problems that have been identified in the implementation of the TQM are:

- Industrials do not have conception of quality.
- There is no clear vision and mission quality policy for the organizations.
- There is a huge lack of time and resources and almost all companies prefer short term goals to mid or long term.
- The process of carrying out the TQM is complicated because it involves all the organization's members.
- Organizations need sufficient time to change the point of view of traditional employees to the concept of quality.

2.3 Knowledge Management

2.3.1 Definition of Knowledge

Knowledge, according to the Greek philosopher Plato, is what is unavoidably true. Belief and opinion, on the other hand, ignore reality, which is why they exist inside the context of the probable and apparent. A relationship between a topic, an object, an operation, and a representation is defined as knowledge. It's a set of "justified true beliefs" that might be formal and explicit or informal and tacit. It's a

set of justified beliefs that can help you build the capacity you need for effective action. Knowledge is divided into three categories: human capital (work-related knowledge), structural capital (longer-term organizational knowledge such as corporate culture), and capital (knowledge of relationships with external entities, including clients). We could say that a culture of knowledge with a positive set of values, attitudes and knowledge expectation facilitates people's willingness to share knowledge and do trust in the knowledge of others, and this is the most important success factor (Herbst, 2017).

2.3.2 History of Knowledge Management Development

The story started with the advent of a number of concepts in the 1980s and 1990s, including business reengineering, benchmarking, downsizing and outsourcing, management information systems, customer satisfaction, and organizational learning, among others.

"Information portals, a time dominated by the explicit depiction of information necessary to facilitate the upstream and downstream integration of the organization," was how the first generation of KM tools was described in 1994. After a year, in 1995, the second generation of KM, "The Knowledge-Creating Company," was presented.

The OECD published a well-known research and knowledge-based economy almost simultaneously with the preceding stage, in the early 1996s. The Internet then emerged as a commercial tool in the late 1990s, ushering in a drastic change in traditional corporate practices. The emergence, utility, and significance of the second generation of knowledge management has prompted the search for and identification of the need for a third generation, which is more focused on heuristics, also known as tacit knowledge, and is closer to democratization and personalization of work. This is where knowledge management is viewed as a social activity.

2.3.3 Concept of Knowledge Management

The literature search contains a large number of definitions for the topic of knowledge management. Some instances are as follows:

KM is a significant source of competitive advantage, and academics and practitioners are increasingly interested in understanding and isolating the aspects that contribute to effective knowledge transfer between SC players.

It provides a new preview for updating and transferring information in the practices of the activities of the SC's various processes, which aids in improving the SC's performance from the standpoint of successful KM adoption. (Patil, 2016). KM is the process of capturing the collective expertise of organization from different sources (i.e., basics of data, paper, people) and to use this database knowledge to leverage the organization. Also, KM is a process that can strengthen organizations in the development of techniques to find and apply knowledge in the organization (Golrizgashti, 2016).

KM entails using a technology platform to gain access to, assess, manage, organize, filter, and distribute information in a way that is helpful to end users.

It's a set of procedures for moving information from differentiated to integrated states in order to generate operational benefits (Ali, 2017).

2.3.4 Knowledge Management Systems

Knowledge management systems (KMS) are information systems that allow the creation, representation, storage, retrieval and application of knowledge. In this regard, to add value to knowledge management, companies need a KMS in order to facilitate the production, preservation and sharing of knowledge. It's adopted to improve alignment with the nature of business knowledge, as well as for increase their level of effectiveness and efficiency. The main goal of implementing KMS is to improve knowledge sharing between users and employees of the organization. Indeed, organizations achieve better knowledge exploitation and innovation performance by implementing a variety of critical technology support for collaboration, information retrieval, communication, real-time learning, simulation, and prediction, as well as better knowledge storage and combination that is activated by the use of KMS (Hussinki, 2017).

2.3.5 Components of Knowledge Management

In fact, KM is characterized by a set of elements which are explained below:

2.3.5.1 Acquisition of Knowledge

The acquisition of knowledge can be described as succession of generations because knowledge is continuously created from stored information and other news and gathered from the corporate environment. He also assumes that the acquisition of knowledge is a process that includes the collection, accessibility and application of knowledge acquired, knowledge acquisition occurs before learning is a process of reflection, allowing the individual to understand the acquired knowledge. It is also the main capital of a modern company which is becoming a necessity as well as internal skills development. On the other hand, the typical procedure for acquiring knowledge consists in obtaining information directly by the engineer via interactions with experts. This recourse to experts makes it possible to improve the levels of development of know-how, enrich skills, provide appropriate training, encourage on boarding employees and fostering their learning. He also argue that in order to generate new knowledge, it is not only necessary to create new content, but also to update, prove and replace existing knowledge. It is why he assures that the implementation of big data could improve the acquisition of knowledge and broaden the existing body of knowledge in order to draw more insightful knowledge for decision making (Yazdi, 2019).

2.3.5.2 Knowledge Application

Knowledge translation in organizations is made possible through processes direction and routine. It is a process of acquiring new knowledge where users can create it and allow the organization to use and extract them. Indeed, the application of knowledge is a boosting of the natural transformation of knowledge in use: versions, forms, remarks, experiences, images, cases, etc. which are all kept by specific tools guaranteeing the reuse and enrichment of knowledge, by optimizing time, effort and resources, making the organization efficient and efficient. In this logic, the combined effect of the appropriate acquisition of knowledge and its effective application is a key to maximize the performance of organizations. In addition, without application, knowledge is useless, because the value of knowledge increases when it is shared and applied. Thus, the goal of knowledge translation is to improve the effectiveness of management of an organization and the productivity levels of workers' knowledge in order to gain a competitive advantage (Sambasivan M., 2009).

2.3.5.3 Knowledge Creation

Knowledge creation is a perpetual process of KM where individuals and groups within a company and between companies share tacit and explicit knowledge. It is the generation of new ideas and the development of new information and know-how in human minds through interactions between explicit and tacit knowledge. The process of knowledge creation takes place. As a result, creating knowledge entails being more active and intelligent when it comes to problem-solving. Issues and overcome difficulties, and are therefore more resilient in an unstable and chaotic workplace. The process of knowledge generation transfer entails capturing a portion of tacit information and converting it into explicit knowledge that may be learnt and utilized (Khan, 2017).

Knowledge creation is the first step in the cycle of life of knowledge. It is an emerging and evolving process that requires motivation, inspiration and pure luck. The success of this process is a fortuitous event, based on the convergence of global reality and the structure of thought. Among the fruit's knowledge creation, we can cite: employee improvement, employee satisfaction customer base, improved image and increased share evaluation.

In summary, knowledge creation should be seen as a process by which the knowledge held by individuals is amplified and integrated into the database organizational knowledge. All people must be motivated to contribute to the creation of knowledge, because such behavior can generate social benefits, such as approval, status and reputation. It is as well as, when creating conversational knowledge, people create and share knowledge by dialoguing with questions and answers which create the emergence of the term "knowledge creation" which has often been treated as a result of the integration of previously isolated knowledge groups as opposed from generating something new (Di Iorio, 2018).

2.3.5.4 Knowledge Share and Transfer

Each employee involved in the production of a product or service contributes to the company's intelligence and/or corporate memory by sharing knowledge. Organizations cannot produce knowledge without individuals, yet individual knowledge will have little impact on organizational effectiveness if it is not shared with others. To put it another way, sharing and exchanging information must be

voluntary and ongoing in a collaborative and supportive workplace. They must be carried out between different levels of workers to reduce processing, research, verification, and approval time. As a result of the time savings, employees will have more time to produce. In reality, information sharing in production workshops aids in the completion of jobs in a timely and effective manner. Also, it provides a special compromise between all the players in the organization, resulting in the best productivity (De Roose, 2018).

Lack of knowledge sharing among members of the organization can affect its overall performance. Knowledge sharing, on time, increases agility in a supply chain while improving stability. Similarly, the transfer of knowledge can turn out to be an interaction between two people, a transfer between a person and a group of people or an activity that takes place between two groups of people. This transfer must be intentional, with a clear desire to transfer knowledge to one or more recipients who must be able to implement them.

2.3.5.5 Role and Challenges of Knowledge Management

The KM allows the detection of new opportunities for market and supports long-term customer relationship management. It transforms information, data, and intellectual assets into long-term value by recognizing usable knowledge for management activities, thanks to these processes that capture, store and transfer organizational knowledge effectively. Therefore, a business intensive knowledge should design appropriate knowledge management mechanisms, such as strategies, policies, infrastructure and training enabling the company to maximize the value of its investments in large volumes of data. However, through the systematic development and use of KM, companies can minimize unnecessary activities and improve the productivity and efficiency of their logistics chain. KM bridges the gap between individuals on conflicting goals in the SC and allows detailed analysis of knowledge requirements for the efficiency of the entire chain of added value (Samawi, 2018).

In conclusion, the real added value of KM is expressed when it makes it possible to identify and coordinate the elements necessary to solve critical problems facing the company faces. These may be one-off issues, such as negotiations with partners, or problems with a longer-term impact, such as a reorientation strategic.

This often manifests itself during the knowledge creation phase, that this either in the process of technological innovation or in the reorganization of skills of the company, for example during the development of new strategic axes (Zhao, 2017).

2.3.5.6 Obstacles to the Implementation of KM in the Company

When launching KM in organizations, managers find themselves intrigued by the choosing the best approach to take. Indeed, most companies have problems to implement KM to achieve the required performance in a turbulent world. In this context, the obstacles to knowledge building derive mainly from the existence of a bad organizational culture. KM can only be approached from a different paradigm. This paradigm believes that technology is not sufficient since in a organizational environment, technology is necessary, but not sufficient to the application of KM. Since KM-related activities in companies often take place in informal organizational structures, the participating actors are difficult to observe and identify. Moreover, without an appropriate infrastructure and organizational preparation, the successful implementation of KM is impossible (Shahidi, 2015).

2.4 Human Resource Management

2.4.1 Definitions of Human Resources Management

Human resource management is the structure of planned human resource deployments and activities that enable a corporation to achieve its goals. It assesses employee engagement, motivation, and contentment, as well as the creation of a calm and pleasant working atmosphere that supports quality improvement. It also takes into account how personnel are evaluated and whether their work is recognized through quality standards. Furthermore, human resource management is a set of operations classed as support activities in the value chain model that contribute to staff development, which leads to the achievement of competition and the production of value in the organization (Al-Hawari, 2013).

In conclusion, human resource management should be seen as a driving force of total quality management and it represents future employment as an imperative always full of hope, positive and essential for the development staff. He also considers that one of the main concerns in the field of human resource management

is how organizations can recruit employees with the knowledge, skills, abilities and others characteristics necessary to achieve certain desired results (Konecny, 2011).

2.4.2 Human Resources as a Competitive Advantage

The importance and added value of human resources management is that it enables organizations to achieve their goals by meeting the expectations and individual needs of employees as a primary goal. Indeed, the HRM of a company will directly affect the production motivation of its employees, their production and their involvement in production activities, which conditions the satisfaction of employees for their work and their life in this company. Also, the creative behavior of employees can positively influence creativity performance personal and team and thus, the innovative performance of the company. Besides, the strongest contribution of HRM practices is that it helps the company to adapt to the environment and improve its performance. Otherwise, if the employees of the target company have a positive perception of the retention policy employees and the potential for job creation in the merged company, Cross-border acquisition performance may improve (Hamid, 2017).

2.4.3 Human Resource Management Practices

Internationally, companies that are effective in their performance practices put a lot of effort into emphasis on the development of their human resources by adopting HRM such as training and retraining their employees and providing them with the adaptability necessary to fulfill their role in the performance. By the way, HRM practices used to manage knowledge significantly affect the financial performance and competitiveness of Russia, China, and Finland. In any case, human resource practices such as training, communication and autonomy are important for the performance of mergers and knowledge acquisition of employees(Li, 2010).

There is a diversity of HRM practices which are presented in the following:

2.4.3.1 Employee Skills

It attempts to increase individual and organizational performance as well as assist employees in achieving particular personal goals by allowing them to participate in decision-making, job inspection, and problem-solving. It is seen as playing a critical role in the development of teamwork and team performance.

Managers, in particular, must communicate with their employees in order to hold them accountable. Employee empowerment, in this context, exemplifies how successful firms have gone to great lengths to implement revolutionary improvements in their systems and HR practices. As a result, we can conclude that autonomy is a motivating factor. (Herbst, 2017).

2.4.3.2 Employee Training

It is defined as a systematic process aimed at promoting the acquisition of skills, rules, concepts or attitudes that translate into better adequacy between employee characteristics and job requirements. It offers opportunities in which employees can expand their knowledge and skills for more effective teamwork and growth and individual development. Moreover, training affects performance in two ways: first, it improves skills and abilities. Secondly, it increases the satisfaction of the personal in relation to their work and their place of work. However, trainings can be given under the name of management skills, but under the supervision and direction of an experienced and high potential executive who will prepare them for leadership position and will be able to provide a continuous increase in performance through regular returns. In other words, training will help build and improve understanding of teamwork and other key issues and skills(Kumar, 2017).

2.4.3.3 Employee Involvement and Commitment

Teamwork, strictly linked to employee participation and engagement, but also HRM, has often been associated with the objective of a more horizontal organization. Employee motivation, performance, and self-efficacy can all be improved through effective teamwork. The ultimate purpose of the team method is to include everyone in the complete quality management process, including contractors, designers, suppliers, contractors, and owners. Furthermore, in order to foster good teamwork, recruiters may be more concerned with selecting people who are team-oriented, as this can aid effective teamwork. This is why teamwork becomes an element major for any organization. He can bring the complementarily of the capacities required for problem solving. Therefore, if organizations have a culture more focused on teamwork, they have more decision-making power delegated to the teams, which makes it easier to respond to problems and uncertainties and fosters creativity, which contributes to the successful use of TQM (Zhao, 2017).

2.4.3.4 Employee Satisfaction

Employee satisfaction is the fulfillment or satisfying emotional state that results positive evaluation of work experiences on the part of the employee. This is a necessary element for their loyalty, which is very important to be relegated to a subsection of the internal process because it has a great influence on the quality of service and the performance of the company in general. Notably, the job satisfaction of employees of service can be increased by improving role clarity, reducing role conflicts and reducing tension at work. Similarly, he claims that the learning and training system, the skills development system employees (such as mentoring and coaching), action research, reward and recognition system, and information system all predict employee satisfaction with the human resources development environment (Gabriel, 2016).

2.4.3.5 Employee Motivation

Compensation or incentive depends on performance and compensation process performance-based incentive, which is considered to be one of the basic means used by organizations to promote and motivate staff. In this regard, employee compensation systems are the most often considered one of the main factors influencing employee satisfaction. Moreover, the compensation can be in the form of several compensation plans and may be in the form of an individual salary, a salary at merit, a performance bonus, a bonus and a salary based on merit in the form of rewards. However, in order to avoid other employees being negatively motivated by such an environment, it is important to emphasize that all employees with the same potential and the same return must have equal opportunities. Ultimately, performance management, compensation and incentive systems are all meant to improve employee motivation at work by clarifying job expectations emotional work and offering appropriate rewards for displaying emotions appropriate with clients (Gabriel, 2016).

2.4.3.6 Employee Loyalty

Employee loyalty may be defined as an employee's commitment to the organization's success and belief that working for this organization is the best alternative for them. Indeed, job satisfaction is likely to influence employee loyalty; thus, maintaining a loyal staff is a necessity for a successful implementation of

overall quality management. It is reflected in their seniority or their hard work to ensure that missions have been successfully completed; also the loyalty reflects the way their face has been reduced to the mentioned name of their organization. Consequently, the calls inspiration can contribute to employee loyalty through emotional engagement increased, while suggesting that when managers use difficult pressure tactics to control employee behavior, employees can quit (Reina, 2018).

2.4.3.7 Employee Performance

Employee performance is the behavior or employee actions associated with the goals or objectives of the organization in question. They also report that the satisfaction of these employees with their higher needs is closely linked to their professional performance. Methods and processes based on two-way communication between employees and employers are referred to as performance appraisal. The assessment entails observing and analyzing employees' performance levels, as well as, ideally, providing them with feedback. In this regard, he indicates that the systems TQM-oriented assessment offers personal recognition and can improve employee satisfaction. He also recommends that feedback on evaluations of the performance is a useful way to develop the empowerment process.

Organizational performance can be achieved through learning opportunities, thanks to better employee performance in their work. In this case, an internal adequacy between the combined individual human resources practices in a coherent and consistent human resources system is supposed to lead to a performance greater than the sum of individual human resources practices (Hamid, 2017).

2.4.4 Obstacles and Conditions related to Human Resources Management

Employee creativity is linked to their usage of social media to research, save, and read information (internal cognitive processes); share, discuss, and co-create knowledge (external cognitive processes) (external cognitive processes).

In many cases, employees are not motivated to use new technologies. They will only use them if they believe that the technology will serve the purpose for which it is designed (Omar, 2016). There is very little agreement on how to achieve HRM potential, due to various methodological and conceptual limitations, including a lack of consensus on how best to operationalize HRM and business performance,

low tendency to examine different HRM practices and lack of use different measures to signal associations rather than causation. We can say that the company gives employees the minimum training that they need to do their jobs. In addition, he state that employees will trivialize training and professional development opportunities in agencies, as they realize that getting more expertise will not be rewarded in their agencies (Ghani, 2018).

2.5 Supply Chain Performance

2.5.1 Concept of Supply Chain Performance

The performance of the supply chain is only possible nowadays through the implementation of an effective total quality management system. This system can only be effective at through the implementation of a knowledge management system that aims to disseminate knowledge useful, at the appropriate time, to the departments concerned but at the lowest cost. This is only possible with the involvement of all stakeholders in the company who must be motivated and trained. The notion of performance is extremely relative because a system appearing as effective in the eyes of some (for example a system that generates an increase in production) is not necessarily efficient in the eyes of others (because it causes degradation of the average level of quality). In order to ensure visibility and performance of all processes that interact at the supply chain level, performance must now be multi- criteria and take into account numerous indications (Golrizgashti, 2016).

There is a lot of work on the subject of performance. They concern physical flows, financial flows and information flows. Previously, the performance of the company was related to costs only, so the improvement of this performance was in fact a reduction in the costs of all the processes in the chain logistics, but today it is insufficient, everything has to be controlled and manage well to have all facets of performance such as agility, flexibility, time, etc. In this regard, (Wiengarten, 2018)assert that the social performance of suppliers affects the overall performance of the SC and suggest that companies should develop cooperation initiatives to manage social responsibility in chains global value. On the other hand, he identifies diversity issues related to suppliers and the impact of these resources on the performance of the supply chain. However, he states that the analyses of the

integration of the strategic processes of the company performance should examine how to coordinate or reduce the impacts of the product development to boost the performance of the company.

2.5.2 Performance Indicator

A key performance indicator (KPI) is a metric that has a substantial impact on an organization's overall performance in the areas of strategic planning and control, tactics, and operations. Costs, time, and dependability are other indications and criteria for logistics performance. They can be used to assess the efficiency of SC partners' logistics activities.

A supply chain measurement system emphasizing on three types of performance indicators, namely resources, production and flexibility. The resource is a financial indicator defined as an effective management of resources in a system to achieve its goal. Production and flexibility are non-financial indicators. The result refers to measures of customer responsiveness, on-time delivery and product quality, and flexibility is defined to measure the ability a system to adapt to fluctuations in demand and deadlines on the part of suppliers, manufacturers and customers. However, performance indicators are elements of measurement that must be carefully defined to measure the results of organizations' efforts in achieving of its objectives and the achievement of the required performance. However, the performance cannot be reached overnight. This requires an improvement cycle relating to performance taken. Performance metrics will at any time reveal metric in which an organization has invested in its supply chain initiative (Aharonovitz, 2018).

2.5.3 Performance Measurement and Evaluation

The practice of quantifying the effectiveness of the organization's various processes is known as performance measurement. Performance measurement gives decision- makers with the data they need to plan, control, and direct the organization's actions. Performance measurement, on the other hand, enables managers to assess, report on, and educate employees and suppliers on key performance indicators. Furthermore, some new research suggests approaches for assessing organizational success. In addition, (Nazemi, 2013) have developed a conceptual model that demonstrates the stages to monitor in order to discover

relevant performance measures. Each step has output and includes feedback to make adjustments necessary for incorrect outputs which could result from the probable deviation in identification of performance evaluation measures, Figure 2.1.

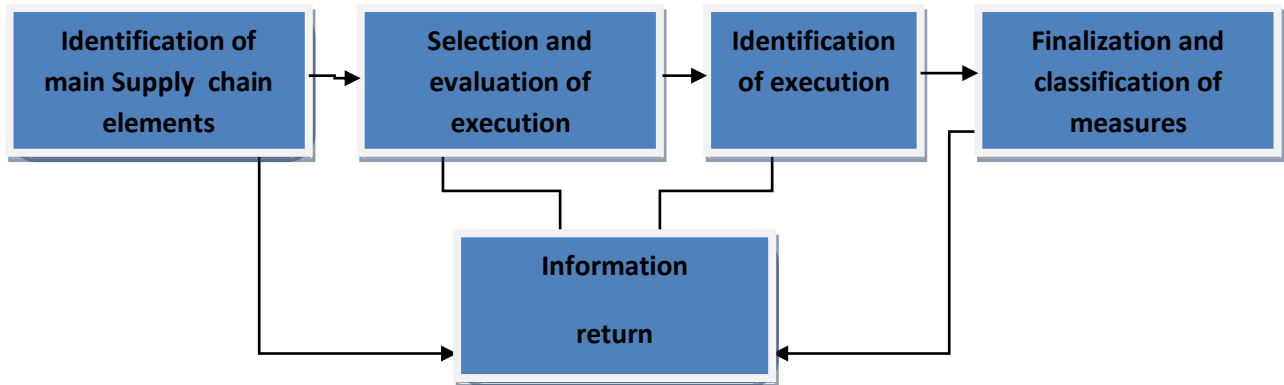


Figure 2.1 Steps for measuring and evaluating performance (Nazemi, 2013)

When evaluating the performance of the supply chain, it is essential not only to identify the determining factors that affect this performance, but also to determine how their interactions interact (Nazemi, 2013).

2.5.4 Aspects of Supply Chain Management

The majority of authors in the literature use the aspects of effectiveness, efficiency, responsiveness, and flexibility to estimate the SC's performance. In addition to these four dimensions, we've seen the growth of other aspects of SC performance in various studies, such as durability, robustness, agility, productivity, and profitability, among others.

Nonetheless, the efficiency component is included into the efficiency facet, and flexibility is one of the agility facet's qualities. As a result, the SC's performance will be primarily determined by the seven evaluation elements listed below:

- Efficiency: consists of doing things correctly and with a minimum of committed resources.
- Reliability: a high level of reliability requires a low probability of disruption and failure. We can assess the impacts of management practices on the reliability of the supply chain through four sub-issues:

--Customer service: assess the impact of the practice on customer satisfaction by terms of choice of products / services, quality or time.

-Supplier service: assess the impact of the practice on the performance of suppliers.

-Stock reliability: assess the impact of the practice on stock outs.

-The reliability of forecasts: assess the impact of the practice on the reliability of forecasts.

- Agility: it is after all flexibility (static and dynamic) and the adaptability of processes, organizations, and supply chains that are desired to cope with and thrive in unstable, turbulent, uncertain, and risky settings. It entails quickly introducing new items in response to changing client needs and efficiently responding to changes in quantity and time delivery requirements.
- Responsiveness: we can assess the impacts of management of the responsiveness of the logistics chain thanks to eight sub-issues:

-Responsiveness of the design: Evaluate the impact of the practice on the design timeframe and product / service development.

-Responsiveness of purchases: Evaluate the impact of the practice on the time taken to purchase raw materials / components.

- Responsiveness of supplies: Evaluate the impact of the practice on the deadline supply of raw materials / components.

- Responsiveness of the sales administration: Evaluate the impact of the practice on the time frame marketing of products / services.

-Responsiveness of production: Evaluate the impact of the practice on the production lead time products / services.

-Responsiveness of distribution: Evaluate the impact of the practice on the delivery time products / services.

-Responsiveness of return flow management: Evaluate the impact of the practice on the deadline for flow returns.

-The overall responsiveness of the logistics chain: Evaluate the impact of the practice on the deadline global supply chain.

- Productivity: Productivity is defined as the ratio of the output of a good or service to the total inputs required to generate it. It is, in reality, a measure of how well an economy utilizes the resources at its disposal to produce commodities or provide services. Productivity, on the other hand, assesses a

company's efficiency. This is information about the company's organization speed and quality. It's important to distinguish between productivity and production; a corporation might be more productive despite producing less. It is the efficient application of resources and innovation to raise the value added content of products and services (Kumar, 2017).

- Profitability: is basically a discount rate whereas it is usually measured as a ratio between a flow of income and a stock of capital. To assure consistency between the measure and the concept requires integrating changes in the price of capital to the measure of profitability. The calculation of financial profitability takes into account (in the sums mobilized) only shareholders' equity. Profitability has an essential role in the creation of value and the customer satisfaction in order to gain competitive advantage and improve profitability at individual and collective level. It is the main profit margin or return on the asset.
- Sustainability: In this horizon, corporate sustainability strategies are therefore challenged to recognize both the sustainability of the market as well as the social and also environmental. Sustainability it is the ability to improve economic performance by maintaining and improving efficient use of resources, reducing health and safety risks human resources and improving human capacities and human well-being.

2.5.5 Factors and Attributes of Supply Chain Performance

It is important to determine the impact of sharing information on the performance of the company in order to implement information sharing at retailers and with those retailers that potentially offer the most performance improvement high, while considering that the upstream members often lack visibility on the internal processes and policies of retailers. However, there are different types of power that can influence important aspects in the supply chain such as trust, relational commitment and supply chain performance and satisfaction, among others. Key performance indicators, which can improve and promote the performance, have been organized into four groups which are: responsibility, competence, flexibility and finally the rapidity. While he defines other indicators such as quality, time, flexibility and customer satisfaction. Other works have investigated the factors influencing the performance of the company as the research of (Katiyar, 2018) which

determined several factors related to the performance, such as effective use of capacity, efficient use of resources and the main production schedule. Also, he mentioned a large number of factors, such as agility, quality level, out-of-stock level, cost, level of customization, etc.

2.5.6 Barriers for Measuring Performance

Many obstacles were encountered in measuring effectively supply chain performance. They differentiate between those that are related to identifying a balanced set of measures that can satisfy member integration and collaboration within the SC, those that are technical and concern a collection of poor data, dispersed IT infrastructure, poor communication, insufficient and low visibility, and others that are related to the structure and integrity of data due to their large size and diversity of sources. The main obstacles for implementing collaborative performance is to stress the need to explore questions of when and with whom collaborate, recalling the importance of supplier selection, including meetings and relationship history, for effective implementation of the collaboration. In this regard, he stated that a prime factor should be taken into account when evaluating the performance of the company (Katiyar, 2018).

CHAPTER 3

3. LITERATURE REVIEW

3.1 Introduction

As the TQM is used to control all the human, financial, informational resources and material in order to achieve total quality in the company, KM allows, through its practices, enhance employee performance and maximize employee knowledge. Therefore, these two management paradigms are essential in any type of business. Nevertheless, in the literature, each author tries to clarify his vision with regard to the application of KM and/or TQM and to indicate the effect of each of them, either on the performance of human resources, either on the performance of the company, or on the overall performance of the company. In this context, we present, in this chapter, a review of the literature dealing with the relationship between KM and TQM. Then, we identify their impacts on the efficiency of the employee and on the performance of the SC with reference to recent work. Finally, we offer a review of recent scientific articles, published during the 2010s and 2020, with the aim of detecting possible factors of KM. In addition, we identified a various key factor of TQM and the most used performance measurement methods.

3.2 Impact of Total Quality Management and KM on Staff Efficiency

3.2.1 Impact of Total Quality Management on Staff Efficiency

TQM's human resource-oriented practices are an essential tool for managing total quality because they help employees develop and exploit their full potential for achieve the business objectives of the company and execute the corresponding action plans. Indeed, HRM can underpin human relationships and group awareness, increase employee competence and achieve change of culture, which pushes the TQM to discover a particular approach to the HRM strategy if it must be

implemented successfully. In other words, an organization must align the systems HRM with its objective qualities. However, human resource management is often associated with the introduction of new innovative forms of work for the efficiency of organizations. This management can play a major role in the implementation of TQM in two ways:

- By modeling the philosophy and principles of TQM at the operational level in the Human resources department. So, this department can serve as a point starting point for the implementation of the TQM process in the company.
- The human resources department, with the help of all actors in the chain logistics, can disseminate and entrench this process at the level of other departments and at the company level, by creating an organizational culture necessary for the development and acceptance of TQM. (Izvercian and al, 2014)

Assessing the capacity of the human resources department to institutionalize the TQM begins with understanding the latter's philosophy. In other words, the TQM relies on the participation of the management team and that of all company staff without exception. In this case, human resources management and TQM will have significant positive on the competitiveness of human resources.

3.2.2 Impact of Knowledge Management on Staff Efficiency

Managing the right knowledge affects the quality of human resources. The sharing and dissemination of knowledge are particularly vital for the improvement employee creativity. In addition, effective knowledge management ensures that employees get timely, reliable, consistent data and information, accurate and necessary to perform their work effectively and efficiently in the company. Often, knowledge management attempts to answer the following question: how to manage human resources to make employees the driving force behind the development of the company?

Knowledge management allows in this case increasing the efficiency human resources management in the company by improving the satisfaction of needs ownership and achievement of staff. Indeed, a staff more satisfied will be more motivated and more productive and mainly more able to accept the news knowledge management culture and its concepts. In other words, this staff satisfies will

voluntarily apply this new culture or even defend it and disseminate it in the whole company, therefore an adequate culture of knowledge sharing within organizations is seen as a key factor in improving the performance of employees.(Iqbal, 2017)

Human capital theory suggests that organizations receive economic value the knowledge, skills, competencies and experience of their employees and that this capital can be increased through training and education. The cooperation objectives of organizations can be shared and implemented through knowledge, capacity and skills of employees held by the organization, through training and an encouraging environment.(Findıklı, 2015)

3.3 Impact of KM, TQM and Staff Efficiency on the Performance of the Company

3.3.1 Impact of Knowledge Management on the Performance of the Company

While KM plays an important role for supply chain partners, as they take joint decisions, solve problems while coordinating their day-to-day operations. Then, knowledge is the most important and critical factor of all the resources that a company manages for the implementation of chain management strategic logistics. So, it is a factor of significant performance of the company.

Knowledge should have some properties to make successful decisions in the performance namely:

- Knowledge must be accurate.
- Knowledge should be accessible when needed. However, its obtaining beyond this time limit makes it invalid.
- Knowledge should be provided in the way it is needed. The unnecessary and invalid knowledge should be eliminated.
- The cost of knowledge should have an optimal level.

It should be noted that knowledge sharing throughout the company represents an important factor in today's global economy. That's why knowledge becomes the most important element to balance supply and demand so that the best supply chain performance can be improved. In addition, knowledge sharing is used as an element of integration important for optimizing performance throughout the performance. Moreover, KM is a process which through the creation, accumulation, organization

and the use of knowledge helps to achieve goals and improve organizational performance. (Ali, 2017)

3.3.2 Impact of TQM on the Performance of the Company

TQM is a popular guideline for the organizational management of the SC, as it is adopted for develop information mapping for an information organization. They ensure that TQM's strategy which emphasizes increasing customer satisfaction levels has a significant and positive impact on performance.(Gharakhani et al, 2013)

Other researchers like (Herbst, 2017)believes that the TQM changes the culture of the company towards the culture of management of the quality and that it is very important to carry out activities related to working together within this culture. The performance of the SC is achieved only with TQM, where working groups have a formal mechanism to measure and control the efficiency of technical systems and coordination between them is achieved for team efforts in work functions.

TQM is an approach whose objective is to maximize competitiveness by improving continuous quality of products, human resources, services, processes and the environment. Moreover, the improvement of the quality of all processes of the company reduces costs, improves the use of resources and improves process efficiency. At the staff level, the TQM provides an effective leadership style, for the management of the company. This style helps leaders use it to motivate their employees and therefore increase their competitiveness in order to improve the performance of the SC.(Samawi, 2018)

Finally, and considering that the main objective of the SC is to satisfy the customer by providing the right product at the right time with the minimum of resources, TQM recognizes whereas a perfectly produced good has little value if that is not what the customer needs. So, the satisfaction of the customers at the heart of every supply chain strategy and no action performance is not possible without taking into account customer satisfaction, which is one of the key factors of TQM.(Zhao, 2017)

3.3.3 Impact of Staff Efficiency on the Performance of the Company

Employee performance related to their jobs has been a major concern for companies and researchers. Thus, in its simple definition, job performance is the behavior or actions of employees associated with company goals or objectives. However, (Tabouli et al, 2016) have provided evidence indicating that the satisfaction of employees at work is a behavioral variable and also an attitude variable that affects or influence their performance. On the other hand, (Ngambi and Nkemkiafu, 2015) believe that training and empowering employees improve the relationship between the company and other stakeholders by creating synergy throughout along the company. He also claims that work team allows employees to actively participate in the work and can produce a better yield, which improves the performance of the company. However, the use of training and professional development programs is expected to increase the efficiency of employees and, therefore, they will have skills, abilities and improved skills, as well as the ability to share them within the performance of the company. Especially in term of the performance, staff need to work effectively beyond functional limits and organizational in various tasks in order to meet the changing needs of clients and to achieve the flexibility of the company.

In conclusion, it should be mentioned that employees seek to be secure, protected, paid, confident, etc. Subsequently, any organization that is not able to provide the good working conditions to its employees will lose their skills and knowledge to because of the flight of its staff. In this topic, (Long et al, 2014) confirm that he is undeniable that organizations are increasingly concerned about their ability to retain their key employees, such as high-level employees and those who make an important contribution to stimulating innovative behavior in the organization. In ultimately, any organization must have reward and recognition systems for motivate and encourage the participation of its employees and strengthen teamwork.

3.4 Relations between KM, TQM, Staff Management and the Performance of the Company

In the scientific literature, we find many studies that deal with the relationship between TQM, KM, HRM and PSC. In this context, table1 illustrates the results of the authors with regard to the relationships between the concepts cited below.

3.4.1 Relation between Knowledge Management and TQM

Table 3.1 Critical analysis of the relations between: KM & TQM

Field	Researchers contribution
KM&TQM	<ul style="list-style-type: none"> ❖ [Aboyassin and al, 2011] proved that KM processes (diagnosis, acquisition, generation, sharing, storage and application) influence TQM. ❖ [Daud, 2012] discovered that a combination of TQM and KM processes, creates a cycle of improvement and development leading to excellence in the company. ❖ [Reddy, 2012] concluded that KM and TQM harmonize and that, for succeed, it is necessary to adopt an integrated approach to their management. ❖ [Loke and al, 2012] expressed that TQM and KM can be integrated to increase the creation of knowledge and subsequently increase the performance and profitability. ❖ [Honarpour and al, 2012] reported that TQM and KM are synergistically linked to each other, and that this interaction can have an effect positive about their possible outcomes, particularly innovation and efficiency.

3.4.2 Relation between Knowledge Management and the Performance of the Company

Table 3.2 Critical analysis of the relations between: KM &CP

Field	Researchers contribution
KM&CP	<ul style="list-style-type: none"> ❖ [Ishak and al, 2010] have shown that companies that develop and apply strong culture of KM can achieve high performance . ❖ [Rasula and al, 2012] discovered that the organizational elements (the culture, climate and collaboration) have a positive impact on the elements of KM, and also KM practices have a positive effect on performance of the organization. ❖ [Wang and Wang, 2012] provided a mechanism by which the practices of the knowledge sharing contribute in innovation and improve the performance of businesses. ❖ [Zaied and al, 2012] presented empirical evidence of the relation between KM and organizational performance. ❖ [Gholami and al, 2013] have shown that KM practices in SMEs have a positive influence on the performance of organization.

3.4.3 Relation between Total Quality Management and the Performance of the Company

Table 3.3 Critical analysis of the relations between: TQM & CP

Field	Researchers Contribution
TQM&CP	<ul style="list-style-type: none"> ❖ [Vanichchinchai and Igel, 2011] proved that TQM practices have a direct and significant positive impact on the supply chain management . ❖ [Gul and al, 2012] claimed that quality could be achieved if management in the company is well maintained and if the workers are motivated to achieve quality and satisfy customers in order to have an excellent level of prosperity and success in business. ❖ [Mohammed and al, 2014] found a positive relationship between operational performance and TQM practices. ❖ [Izvercian and al, 2014] proved that the implementation of TQM in terms of human resources management has a positive impact on the sustainability and competitiveness of the company. ❖ [Sadikoglu and Olcay, 2014] stated that the general practices of TQM improve all performance measures.

3.4.4 Relation between Human Resource Management and the Performance of the Company

Table 3.4 Critical analysis of the relations between: HRM &CP

Field	Researchers contribution
<p>HRM&CP</p>	<ul style="list-style-type: none"> ❖ [Menon, 2012] indicated that flexible job descriptions, team organization, teamwork training and the use of performance metrics for determining rewards are closely linked to the satisfaction of the employees which generates the performance of the SC. ❖ [Alfalla-Luque and al, 2015] demanded that managers must promote employee engagement not only for better SC success, but also to mitigate the obstacles of the implementation of the management of the Supply Chain. ❖ [Gómez-Cedeño and al, 2015] noticed that resource management human resources has significant direct and indirect impacts on the results of supply chain management. ❖ [Ngambi and Nkemkiafu, 2015] ensured that only training in employment and empowerment have a significant impact on performance finance and corporate social responsibility. ❖ [Alnidawi and Omran, 2016] clarified that the management activities of human resources help generate new ideas that play an important role in supporting various major operations in the supply chain value..

3.4.5 Relation between Total Quality Management and Human Resource Management

Table 3.5 Critical analysis of the relations between: TQM & HRM

Field	Researchers contribution
TQM&HRM	<ul style="list-style-type: none"> ❖ [Ali and al, 2010] have shown that the essential factors for the success of human resources in TQM are team spirit, staff competence, customer orientation and visionary leadership. ❖ [Agus, 2011] described TQM as a potential source of advantage sustainable competitiveness and he suggested that improving the performance of employees, active employee engagement and performance appraisal are the most widely accepted components of a performance appraisal. human resource performance focused on TQM. ❖ [Miartana and al, 2014] presented the leadership and improvement factors continues as the foundation for success in the practice of quality management. total quality in four and five star hotels in Bali. ❖ [Lee and Lee, 2015] expressed that organizational learning has significant and positive effects on quality management.

3.4.6 Relation between Knowledge Management and Human Resource Management

Table 3.6 Critical analysis of the relations between: KM & HRM

Field	Researchers contribution
KM&HRM	<ul style="list-style-type: none"> ❖ [Fong and al, 2011] have shown that recruitment and selection, work team building, training and development, and performance appraisal have a positive relationship with knowledge sharing. ❖ [Zaman and al, 2014] stated that managers can delay work, empower employees and promote team culture in order to successfully share tacit knowledge. ❖ [Fındıklı and al, 2015] found that performance appraisal and employee compensation have significant explanatory power for the ability knowledge management. ❖ [Lendzion, 2015] expressed the role of KM in HR management, noting that it strengthens the competitiveness of the company thanks to the knowledge and key skills of employees. ❖ [Sense and al, 2015] have imposed that managers must encourage the knowledge management through HR, while reducing gaps in power, optimizing performance, motivating innovation and environmental disclosure and also using KM in each activity Management.

3.5 Performance Measurement: Methods and Processes

It is clear that SC performance measurement allows companies to differentiate themselves and to outperform their competitors. In addition, it allows them to move forward and evolve in improving weak points and eliminating dysfunctions. Thus, companies have still need PSC measurement methods, taking into account that these methods are diverse and sometimes complementary. From the literature review, we found that several authors have examined the context of the PMC (performance measurement of the company). However, some of them have

preferred to publish methodological approaches and others have chosen to apply one or several methods to measure this performance on a particular case study.

Performance measurement processes differ from article to article depending on the researcher's strategy. For example, the methodology of (Verdecho et al, 2014) consists first, to define the elements of performance according to seven perspectives. Then he defined the new goals and KPIs for new prospects. Next, he checked the consistency with the existing objectives and key performance indicators, and he made some adjustments. Finally, the weights of the objectives were obtained, and various results have been released.

For (Prasad, 2012), performance measurement processes comprise four stages: in the first stage, the indicators were determined and explained by an explanatory factor analysis. In the second stage, the data was collected in interviewing 115 experts working in pharmaceutical companies in the Tehran stock exchange. In the third step, an analysis for the collected data was carried out by applying the NDEA model (network data envelopment analysis). In the last step, the results have been obtained.

Similarly, Bedford followed four steps: they started with selection of a sample (90 Irish companies) and collection of data on the basis of survey data. Next, the questionnaire was tested with three academics and five members of the management team in companies operating in innovative industries. After the data was examined using least order regression analysis. Partial squares (PLS). Finally, the results were obtained.(Bedford et al, 2018)

Moreover, (Bezerra and Gomes, 2018) used four stages, namely: research instrument, data collection, analysis and the results.

For (Azbari et al, 2014), they used five steps. First, the indicators were determined and explained by an explanatory analysis of the factors in order to know the current situation. Second, the NDEA descriptive analysis method is used. Third, 115 experts and senior executives of pharmaceutical companies from the Stock Exchange Tehran were interviewed as a sample. Fourth, a factor analysis first-order and second-order confirmatory studies were performed. Finally, the results have been presented.

3.5.1 Data Collection Tools

The purpose of data collection tools is to collect reliable, correct and truthful to the company. But it is not easy, because the data collection time can be either instantaneous or long-term.

In addition, the availability and confidentiality of manager data are also one of the main obstacles to data collection. However, various tools can be used to collect the data, such as: the survey, the company data, interview with experts, use of a database data, annual reports, simulation results, etc. Among these means, the survey, the Delphi surveys and interviews are the most common in the literature because they are relatively easy to undertake to collect data, often qualitative or under form of opinion. These tools are generally limited by the availability of managers. They are based on a type of document consisting of well-defined and determined questions, developed by those who seek to analyze facts, opinions and attitudes.

However, for enterprise data, they allow the collection of data quantitative such as: performance indicators, records, measurements, etc. specific to the real case study of a company. Although it is important to have a accurate and reliable performance measurement, this tool is often difficult to implement since the data is considered confidential. In this regard, few companies agree to provide this type of data that promotes the development of the economic sector and give other companies the opportunity to measure their position and improve their politics. Nevertheless, the annual reports are published and are considered as a source significant amount of data and business experimentation. (Verdecho et al, 2014)

3.5.2 Performance Measurement Approaches

The literature offers a number of methods for developing a measurement system in a supply chain context such as the Balanced Scorecard, the activity based costing/management (ABC/ABM), the SCOR model or the ECOGRAI method. We briefly present these different methods below:

3.5.2.1 Balanced Scorecard

The Balanced scorecard (BSC) is a management tool that offers a new idea for estimating the performance of manufacturing industries from four perspectives. It

is used to monitor and control strategic guidelines using indicators designed for business goals in each perspective, so to assess either the particular business process or supply chain management. The BSC seeks to provide managers with a quick yet comprehensive overview result of operational operations and allows them to focus on the areas reviews that advance the strategy and operations of the organization. The objective of this method was to enable better decision-making by providing managers a broader perspective of tangible and intangible assets. (Balakannan et al, 2016).

Similarly, the BSC allows organizations to monitor measure and track their financial and non-financial performance according to their strategy and vision.(Mehralian et al, 2017)

According to (Zizlavsky, 2014), the BSC concept transforms the vision and strategy of company into a comprehensive set of performance indicators that provides a framework for assess its strategy and management system. (Thanki and Thakkar, 2018) believe that integrating BSC into strategy map can provide in-depth root cause analysis complex, as it can affect the relationships between performance measures by allowing display the roadmap and therefore improve the performance of the supply chain.

In addition, the BSC distinguishes four performance measurement perspectives which are cited as follows:

- Customer perspective: customers primarily care about time, quality, service and cost offers; this is why it is important to understand the performance of a SC against these criteria from the perspective of its customers. So the task is to assess what that customers really appreciate, now and in the future, and translating this into proposals of value that lead to customer satisfaction and loyalty.
- Financial outlook: in the hierarchical concept of the BSC, all perspectives are oriented towards the financial perspectives, whose control measures are substantive improvements through strategy implementation and execution.
- Internal process perspective: defines what the CS needs to do to provide attractive value propositions to customers and achieve an adequate financial return for shareholders.

- Learning perspective and growth: the learning capacity of the CS is based on employees, information technology systems and quality organizational. The innovation and learning perspective identifies the infrastructure underlying the other three perspectives. This infrastructure is essential for a CS becomes a learning chain. The four perspectives must not be added together but correlated to measure the impacts of each of the performances in terms of profitability and level of customer service. It is the correlation of the four axes that will make it possible to set the score to be achieved so that the supply chain is efficient.

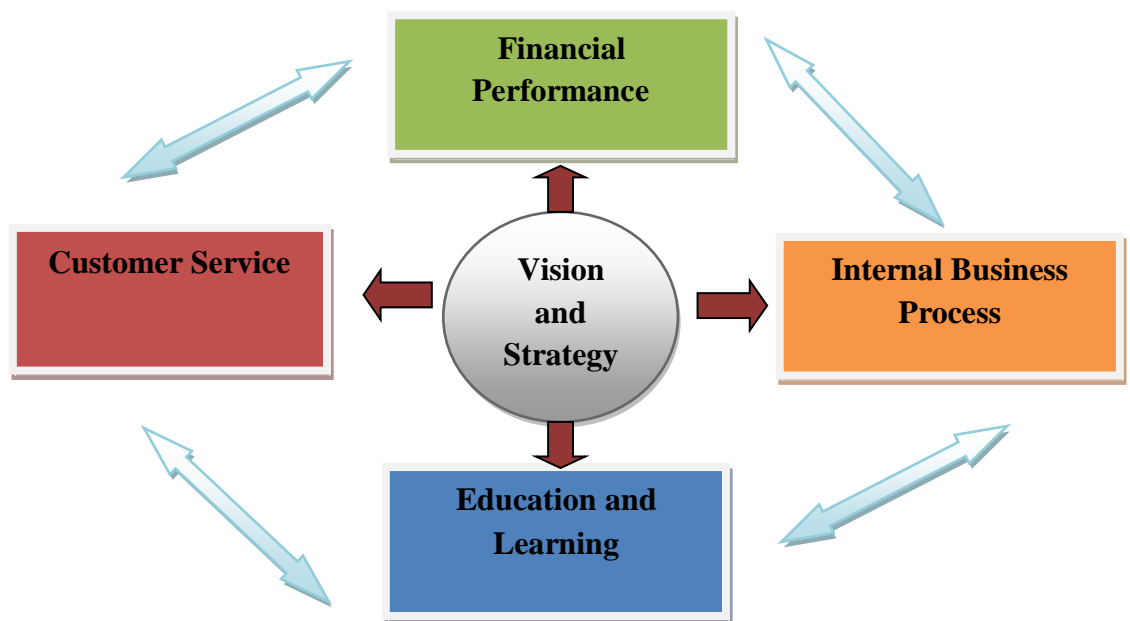


Figure 3.1 The balanced scorecard methodology(Nikabadi and Shahrabi, 2015).

The BSC approach has certain advantages, such as improving customer satisfaction and operational objectives, the broadening of operational criteria, the concentration of strategic goals, etc. Nevertheless, it presents some limitations, such as the ability to prioritize weight and consolidate data from performance elements. (Nikabadi and Shahrabi, 2015).

3.5.2.2 ABC/ABM Management

The ABC/ABM method makes it possible to identify the real cost factors within a company, as well as possible cost savings based on an inventory of activities

and a analysis of the resources needed to carry them out. It consists of two parts: the ABC, the ABM. This method consists of modeling and measuring costs by activity-process. The objective is to better understand and explain the formation of costs and the factors that oversee their training by linking them directly to the company's activities. One of the main assumptions of the ABC method is based on the fact that the products do not directly consume costs but activities that use resources which themselves have a cost (Figure 3)

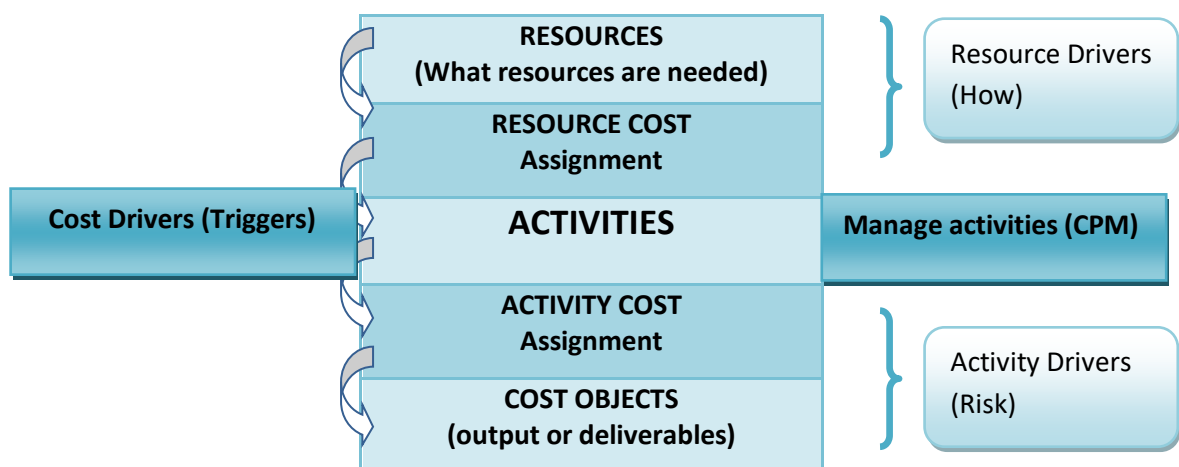


Figure 3.2 Activity based costing methodology [Ying, 2006]

The implementation of the ABC method goes through the following stages:

- Identify the activities (the processing of an order for example): These activities constitute the central point of the approach and must be precisely defined.
- Capture and allocate resources. This step consists in determining the cost of the activities by allocating indirect costs to it.
- Choice of inductors: A driver will be to allocate the cost of activities to the costs of products. It is the unit (for example the number of orders) which makes it possible to distribute the cost total activity.
- Calculate the cost of inductors: It is the total cost of the resources consumed by the activities of the center divided by the number of drivers.
- Valuate cost objects: The cost of the objects is done by assigning the cost of the activities using the inductors.

- Interpret the results: One of the objectives of the method is to describe the formation of the cost to put it in parallel with the formation of value.

ABM provides, from the ABC, the keys to maximizing performance. It makes it possible to measure the activity in terms of costs and performance indicators.

3.5.2.3 SCOR Supply Chain Operations Reference

The SCOR model (supply chain operations reference) is a standardized methodology for description and evaluation of flows within its supply chain. It was built by and for manufacturers whose aim was on the one hand to structure a repository of standard logistics processes and on the other hand to highlight the performance criteria, the indicators and the best associated practices. This model can be used for a wide range of chain types, from the simplest to the most complex. The description of the information technologies intended to support the model. (Figure 3.3)

On the other hand, SCOR is a model used to configure the SC according to the strategy business by providing standard descriptions for its activities. He identifies the particles and supports the appropriate tools for each activity (Sirsath and Dalu, 2015). It is also a framework for a common language among SC partners regarding its five-management process (Sarode and Khodke, 2011). According to (Pretorius et al, 2013), the adoption of SCOR model has several advantages, such as: rapid assessment of PSC, clear identification of performance gaps, the search for excellence in process, etc.

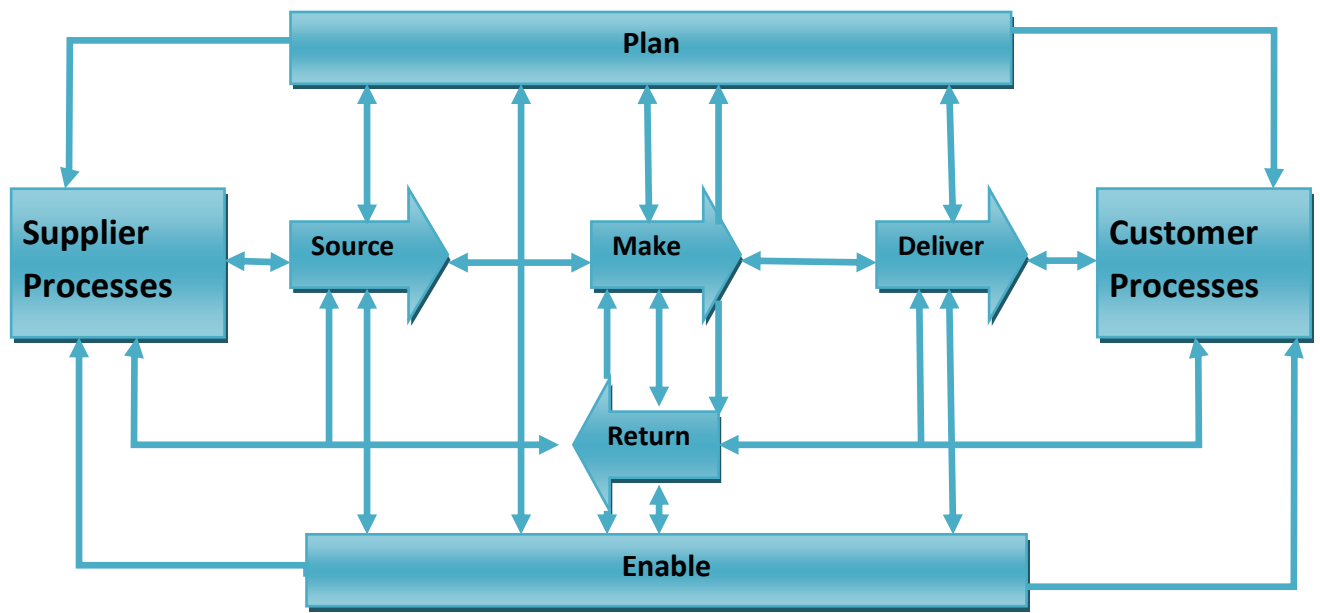


Figure 3.3 Supply Chain operations reference methodology (Ying, 2006)

The supply chain operations reference model integrates all the processes, flows and transactions involved in the supplier from supplier to customer from customer.

- The planning process (Plan) focuses on balancing demand and procurement to roll out an action plan that responds to the needs of sourcing, production and delivery.
- The supply process (source) is concerned with the supply of services and products to meet assumed, planned, or current demand.
- The manufacturing process (make) affects the modification of the products supplied into finished goods to replicate forecasted, planned or current demand.
- The delivery process (deliver) affects the shipment of products and services to customers to meet forecast, planned or current demand.
- As for the return process, it concerns the activities of returning products received from customers or products to be returned to suppliers.

3.5.3 Data Analysis Techniques

Analytic hierarchy process (AHP) is a quantitative technique that facilitates the structuring of a complex problem with multiple attributes.

AHP is a relatively perfect evaluation system, easy to calculate and also applicable to multi-objectives and multi-rules. But it is difficult for AHP to determine the weight value. Nevertheless, this technique provides an objective methodology for deciding among a set of strategies to solve this problem.(Yang, 2009)

Analytical network process (ANP) is used to process interdependent relationships in a complex environment. ANP generalizes the pair wise comparison process, so that decision models can be constructed as complex webs of dependency of decision goals, criteria, and of alternatives influencing the set of criteria and alternatives. This influence should not necessarily reverberate only downwards, as in the case of the structure hierarchical. It can flow between any two criteria in the dependency network, which leads to non-linear results of the priorities of the alternative choices. (Tseng and al, 2016)

Data envelopment analysis (DEA) is a non-parametric method for estimation of the production frontier. It is used to empirically measure the productive efficiency of decision-making units. This method provides an ideal tool for the quantification of SC performance. (James, 2011)

Fuzzy logic (LF) is a multi-valued logic that allows defines intermediate values between conventional evaluations, such as true/false, yes/no and up/down. She has the ability to deal effectively and with vague human judgment; thus facilitating the decision-making process. Using fuzzy set theory to measure PSC can be applied to improve operations.(Sahu and al, 2013).

3.6 Literature Review

Table 3.7 Literature review

Author name/date	Subject	Result
[Ishaket al, 2010]	Integrating knowledge management and human resource for sustainable performance	Companies that develop and apply strong culture of KM can achieve high performance and productivity.
[Özbağ And M Esen,2013]	The impact of HRM capabilities on innovation is related to the knowledge management capability	Human Resource Management Capabilities are positively related to Knowledge Management (KM) Capability which turns into innovation.
[Alnidawi and Omran, 2016]	Human Resources Management Activities Adopted in the Value Chain Model and their Impact on the Organizational	The management activities of human resources help generate new ideas that play an important role in supporting various major operations in the supply chain value..
[Ali et al, 2010]	Implementing Total Quality Management in Education: Compatibility and Challenges	The essential factors for the success of human resources in TQM are team spirit, staff competence, customer orientation and visionary leadership.

[Izvercianet al, 2014]	The Impact of Human Resources and Total Quality Management on the enterprise	the implementation of TQM in terms of human resources management has a positive impact on the sustainability and competitiveness of the company
[Vanichchinchai and Igel, 2011]	The impact of total quality management on the performance	TQM practices have a direct and significant positive impact on the performance of the company

3.6.1 Literature Review of TQM Practices

Several researchers have worked on the theme of TQM and they have identified several practices key to this concept. In this context, a study of 14 articles was carried out and the output of this review is presented in table 2. This table shows 11 different practices of the TQM cited in the works published during the years 2010 until 2019.

Table 3.8 Distribution of TQM practices according to the articles studied

Articles	Leadership	Client focus	HR M	stake holders	Process management	Strategic planning	Information analysis
[Bourantaet al, 2017]	*	*	*			*	*
[Chong and al, 2010]	*	*					
[Aquilani and al, 2017]	*	*	*			*	*
[Gómez and al, 2017]	*	*	*	*			*
[Aamer and al, 2017]	*	*		*	*		

[Oliveira and al, 2019]		*	*	*		*	
[Jusoh and al, 2008]	*	*	*	*		*	*
[Zwain and al, 2017]	*	*	*			*	*
[Fernandes and al, 2017]	*		*	*		*	*
[Banuro and al, 2017]	*		*				*
[Baird and Harrison, 2017]			*				*
[Ooi, 2014]	*		*		*		*
[Samawi and al, 2018]					*		
[Psomas and al, 2017]		*	*	*		*	

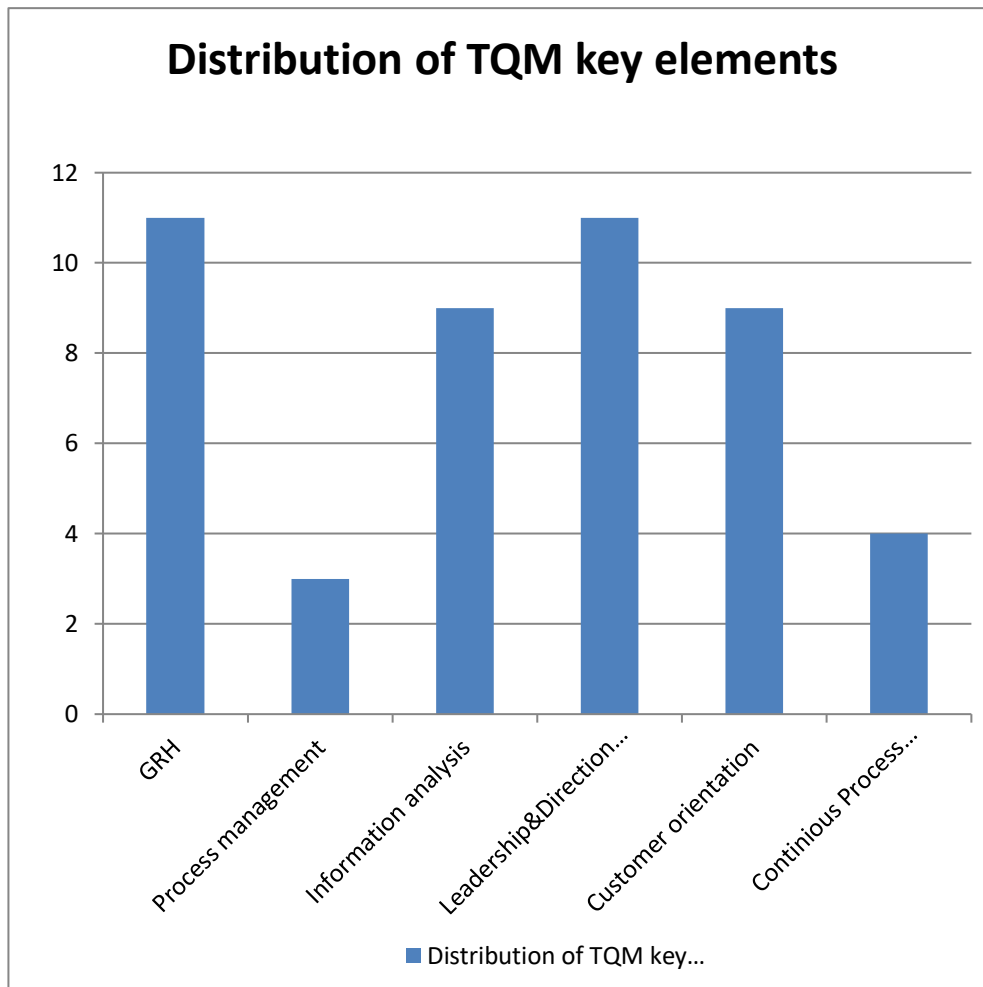


Figure 3.1 Distribution of TQM key elements

According to figure 3.1 showed above, we notice that the two factors “HRM” and "leadership" factor management commitment” are the most cited factors for the 14 articles (almost 74%). This proves that these practices are the most important practices among all TQM factors for the articles studied. However, "customer orientation" and “information analysis” that comes in second place with a percentage of almost 60%. On the other hand, “Continuous process improvement” the factor ranks third with a percentage of 27%. Which is the factor that up to now the majority of companies finds it difficult to understand and master it, the latter is fourth with a percentage of 52%. Finally, we note that the “process management” factor settles in last place with a percentage of only 20%.

3.6.2 Literature Review of KM Elements

Table 3.9 Distribution of KM elements according to the 17 articles studied

Articles	Acquisition of knowledge	Knowledge translation	Knowledge creation	Knowledge sharing	Capitalization of knowledge
[Gholami and al , 2013]	*		*	*	*
[Lau and al , 2016]	*			*	
[Migdadi and al , 2018]		*		*	*
[Qi andChau , 2018]		*	*	*	
[Saatcioglu and al , 2012]	*	*			*
[Tubigiet al , 2013]	*	*	*	*	*
[Zaim and al , 2013]			*	*	*
[Zwain and al , 2012]	*	*		*	*
[Sokhanvar and al , 2014]			*	*	
[Ağan and al , 2018]				*	
[Foote and Halawi , 2018]	*		*		
Garrido and Padilla Meléndez, 2011]	*	*		*	

[Kanat and Atilgan, 2014]	*			*	*
[Khan and Vorley, 2017]			*		
[Mougin and al, 2015]				*	
[Calvo-Mora and al, 2015]		*	*	*	*
[Sokhanvar ad al, 2014]	*		*		*

The study of 17 recent scientific articles, published during the years 2011 and 2018, shows that despite the different naming of the KM factors that we had, there is imperatively five basic elements.

Subsequently, an identification of the five key elements of KM retained, as well as their synonym used by researchers:

- Knowledge creation: similar terms are also used, such as that knowledge production, knowledge discovery and the construction of knowledge.
- Application of knowledge: it is also called use or reuse of knowledge.
- Acquisition of knowledge: the authors use related words such as: knowledge extraction and knowledge capture.
- Sharing/transfer of knowledge: it is also the exchange of knowledge or the dissemination of knowledge.
- Capitalization of knowledge: other terms are used in this field, such as: knowledge protection, knowledge accumulation, knowledge storage and retrieval.

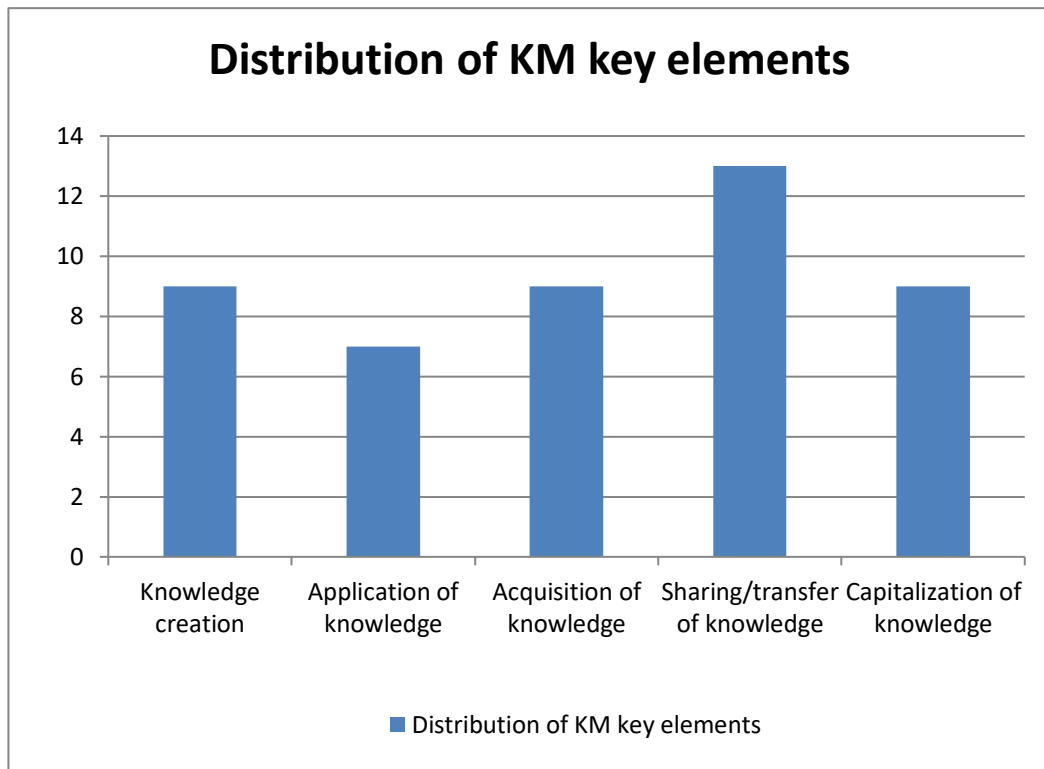


Figure 3.2 Distribution of KM key elements

According to Figure 3.2, we find that the most cited element in the articles studied is the “knowledge sharing and transfer” element with a percentage of 76.47%. However, the “knowledge acquisition”, “the acquisition of knowledge” and “capitalization of knowledge” elements takes second place with a percentage of 52.94 %. Nevertheless, the factor settles in the last link with a percentage of 41.17%.

3.6.3.1 Literature Review of Performance Indicator Measurement

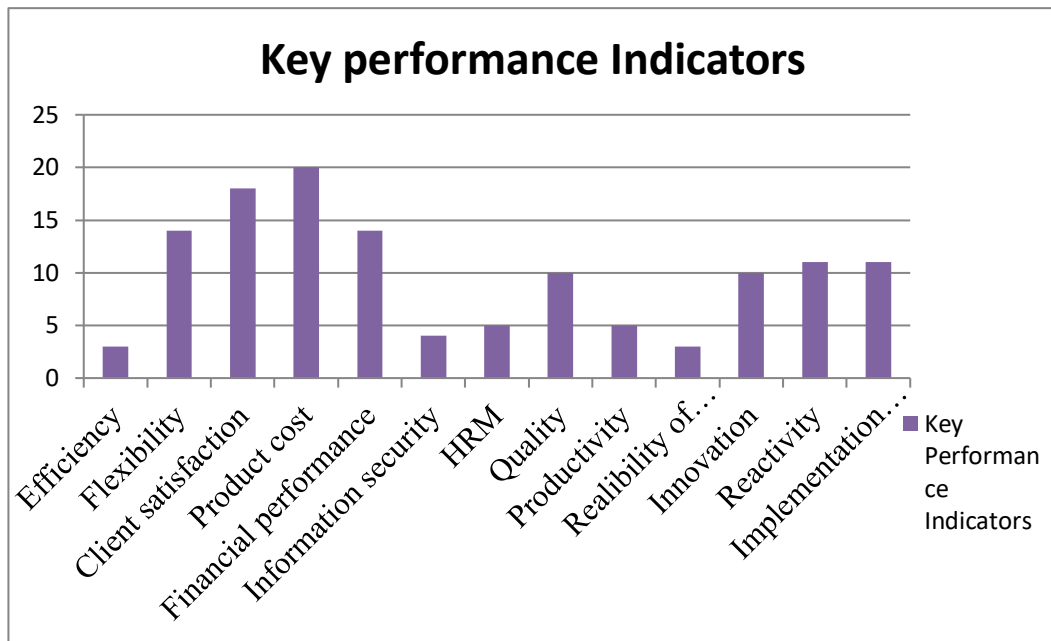


Figure 3.3 Performance indicators

Figure 3.3 shows the frequency of KPI citations in the analyzed articles. He is remarkable that the cost of products and customer satisfaction are the indicators of performance most used by authors, with 60% and 56% citations respectively. Furthermore, the two criteria: financial performance and flexibility appeared with 42% of citations. However, the innovation, quality, reactivity and lead time indicators implemented come in third place, with almost equality in terms of the number of quotes. In addition, there are indicators: Productivity, management of human resources, information security with a rate of 10 to 20 %. Finally, performance indicators: management efficiency of assets, collaboration with stakeholders, reliability of delivery, efficiency, resource efficiency and technological efficiency are present with a number 10%. This ranking shows that most companies mainly use indicators of performance based on cost, customer satisfaction, financial aspect, and flexibility, and quality, capacity for innovation, responsibility and lead time.

However, they give less importance to performance indicators: effectiveness of management of assets, reliability of delivery, efficiency, resource efficiency, etc. This unequal use between the indicators and the choosing to use some and ignore others can be a study whose purpose is the identification of the factors of this choice.

3.6.3.2 Performance Measurement Approaches

Through 25 articles reviewed, various approaches were identified, such as: BSC, SCOR, GRAI, HPI, hypothesis (Hyp), Scenarios (Scen), interpretative structural modeling (ISM) and integration of the capability maturity model (CMM). Figure 3.4 (red diagram) represents the frequency of use of these approaches.

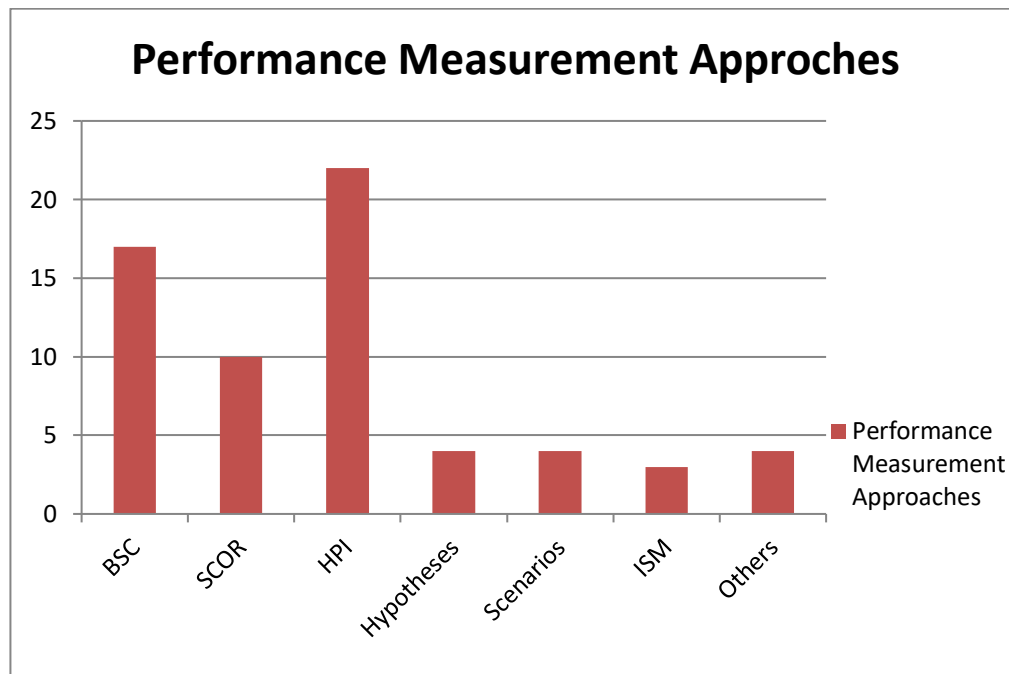


Figure 3.4 Performance measurement approaches

The results show that 10% of the articles reviewed did not use approaches in their study. However, HPI is the most used approach with a rate of nearly 35%, followed by BSC model with a rate of 25% and the SCOR model with a rate of 15%. For the model BSC, it should be noted that some authors have used green BSC (GBSC) (Bhattacharya et al, 2014) and knowledge based BSC (KBBSC) (Naini et al, 2011). In some studies, the authors combined two approaches, such as: (Lin et al, 2014) who brought together BSC and ISM, (Thakkar et al, 2009), (Dweekat et al, 2017) and (Chorfi et al, 2018) who combined BSC and SCOR, (Eskfai et al, 2015) and (Kamakoty, 2018) which integrated BSC and hypotheses. In contrast, (Balfaqih and Yunus, 2014) joined SCOR and hypothesis.

3.6.3.3 Data Collection Tools

In this analysis, 10% of articles present a methodological framework based mainly on a technical asset. Nevertheless, 90% of them used data collection to apply a practical case: nearly 65% of them used surveys. Some authors have used company

data (24%) or interviews with experts (nearly 17%). However, 3 studies used other data, such as: annual reports (RA) (Jauhar et al, 2017), empirical data (Wong et al, 2008), simulation results (Al-Hawari et al, 2013), life cycle Assessment database (BDECV) [Simão et al, 2016), etc. It is also mentioned that nine authors combined survey and interviews with experts like (Mani et al, 2018], (Asrol et al, 2017); (Ashrfauzzaman et al, 2016), (Haghighi et al, 2016), etc. Nevertheless, (Patil and Kant, 2016), (Landström et al, 2018) and (Kazancoglu et al, 2018) combined company data and interviews with experts. Figure 3.5 (blue diagram) illustrates these results.

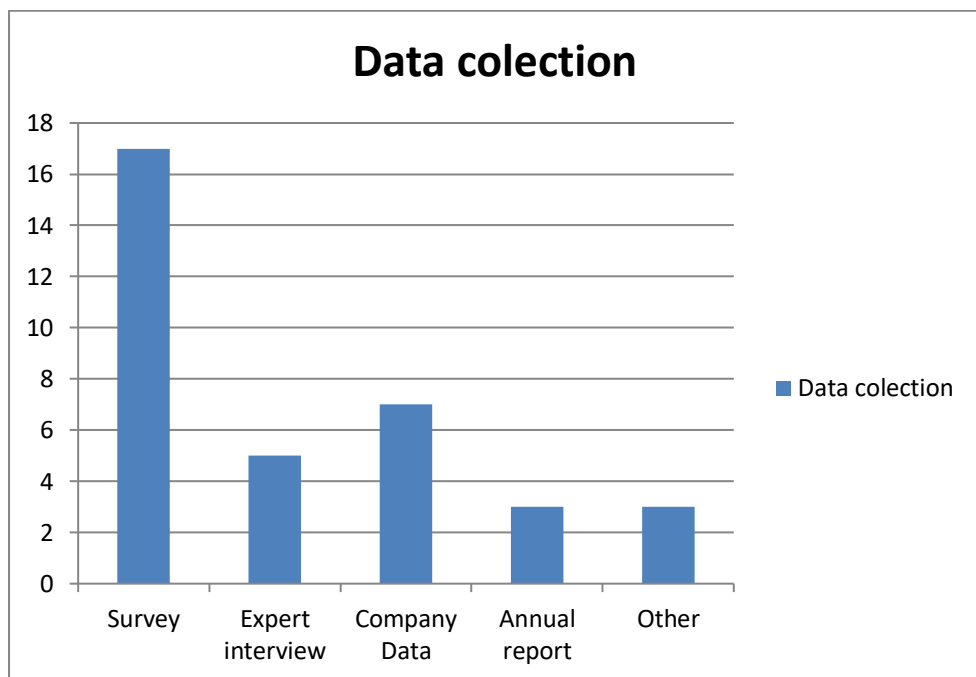


Figure 3.5 Data collection tools

3.6.3.4 Data Analysis Techniques

Several simple or hybrid techniques have been implemented in these articles, such as: AHP, ANP, Sim, DEA, LF, game theory (TJ), statistical analysis, resource based view (RBV) and decision-making trial and evaluation laboratory (DEMATEL). Other techniques have also been used, such as: design of experiments (DOE) (Azadeh, 2015), value analysis (VA)(Motadel, 2013), KPI cost transformation matrix (PCTM) (Cai et al, 2019), goal-setting theory (GST) , quality function deployment (QFD) , measuring attractiveness by a categorical based

evaluation technique (MACBETH) (Clivillé, 2012), attribute hierarchy model (AHM) (Hemalatha, 2017) and Institutional Theory (TI) (Shibin, 2017).

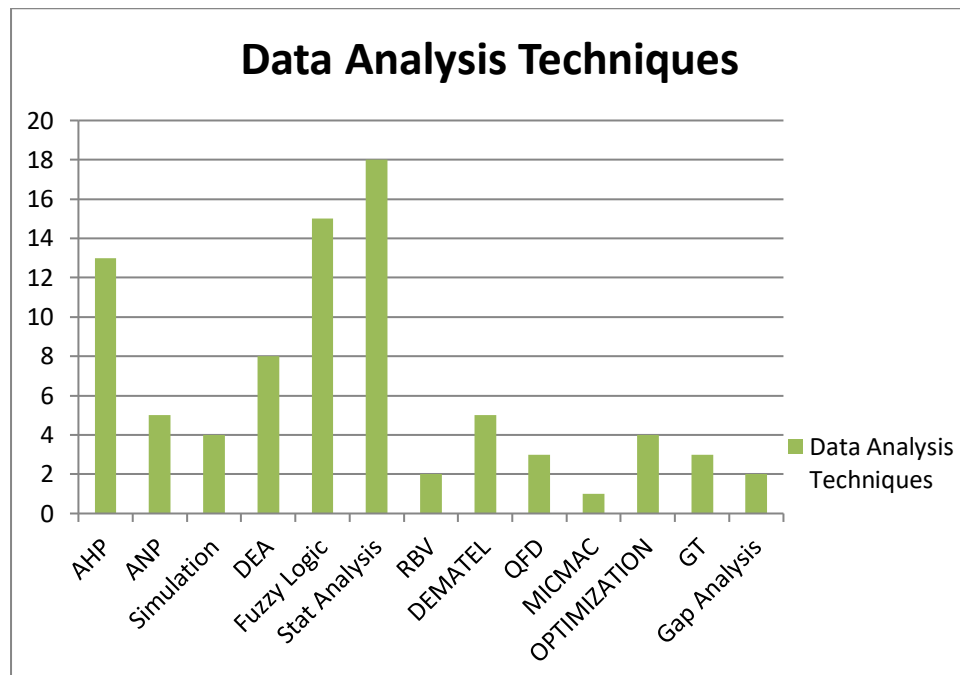


Figure 3.6 Data analysis techniques

In this review, all articles used data analysis techniques to measure PSC, and each item may use more than one technique. Thus, for the classification of the results, figure 10 (green diagram) indicates that the most used technique is the statistical analysis with a rate of about 35%. In second place, we find AHP (simple AHP, Fuzzy AHP and Gray AHP) and LF (Common LF, fuzzy comprehensive evaluation (FCE), fuzzy inference System (FIS), LF controller (LFC), fuzzy-based resilience (FBR), fuzzy-based decision-support system (FDSS), membership degree transformation (MDT) and logarithm triangular fuzzy number (LTFN)) with a rate of 24%. Then manifests DEA with a total rate of around 15% (among them, simple DEA, raw DEA, network DEA, DEA robust and fuzzy DEA). In addition, almost 9% of the articles reviewed used ANP (Simple ANP and PNA fuzzy).

3.7 Conclusion

This work is based on a review of 25 articles, examining the question of measurement methods of the performance, published during the decade 2008-2018. Its objective is identifying the data collection tools, approaches and techniques used to measure the performance of the company, in several industrial fields.

The results show that over the period 2014-2018, researchers have paid more attention to the issue of performance measurement in order to help decision-makers to minimize variations in the performance of their supply chain. Furthermore, this study reveals that in order to collect data, the majority of the authors used surveys and to analyze the results, they applied statistical analysis methods. However, the balanced scorecard, supply chain operations reference and human performance improvement are the most common approaches applied in the reviewed works, and the analytic hierarchy process and statistics analysis are the most cited techniques for data analysis. In fact, in the work that dealt with a case study, several industrial fields were mentioned. Furthermore, the most used performance indicators in the articles analyzed are the following: cost of products, customer satisfaction, financial performance, flexibility, innovation, quality, and responsiveness and implementation time. In addition, the most adopted research methodologies for performance measurement are centered on three main approaches: performance indicators (balanced scorecard, supply-chain operations reference and human performance improvement), assumptions and scenarios.

CHAPTER 4

4. RESEARCH METHODOLOGY

4.1 Introduction

Knowledge management and total quality management play a very important role in the progress of a business. On one hand, knowledge management facilitates access to stored knowledge and managed by knowledge management systems and on the other hand, total quality management guarantees the good management of human resources and improves the performance of the company by integrating work concepts and methods for the employees to better increase their performance during the work. Also, to connect all those factors we need good measure, data collection and performance indicators tools.

In this aspect and according to what has been presented in the first two chapters and in the literature review, we see that total quality management and knowledge management have remarkable effects in the organization, either at the level of the improvement of performance and the added value presented by the staff, either at the level of their effect on the performance of the company.

In this chapter, the literature reviews that we have carried out and the relationships between knowledge management, total quality management, personnel efficiency and the performance of the company that we have identified, have helped us design a sample conceptual model presenting the relationships between the basic notions of our study.

To successfully review this conceptual model and identify a scientific study hypothesis showing the importance of each concept in the organization, we decided to present our key investigation including the problematic of our study, our

questionnaire, data collection methodology. Furthermore, the methods for processing and analyzing these data have been exposed.

4.2 Problematic

The problematic of our study is that most organizations had a huge issues related to the use of knowledge management and total quality management and it's relation with staff efficiency and the performance of the company causing them a serious internal/external problems and that could lead to temporary or permanent shutdown.

4.3 Solution

Based on our questionnaire perceptions to study the impact of the management of knowledge and total quality management on staff effectiveness and on the performance of the company. Also, we identified the relations between all those factors and we provide the most used practices and methods to measure the performance of the company which are: scorecard, supply-chain operations reference and human performance improvement

And finally we succeed to identify our study hypothesis and our conceptual model to be used in future studies to support researchers gain more insight about those concepts and develop more the impact of the later on the performance of the company.

4.4 Operationalization of Criteria

To study the impact of knowledge management and total quality management on the efficiency of personnel and on the performance of the company, we have created a conceptual model (Figure 4.1) based on the literature review which illustrates the relationships between the four basic concepts mentioned.

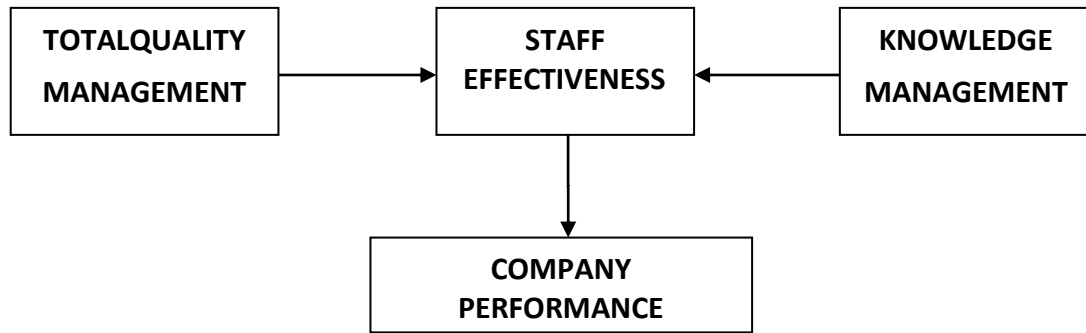


Figure 4.1 Conceptual model

As indicated in the conceptual model, we have 4 concepts which are: total quality management, knowledge management, staff effectiveness and company performance .Each concept is related to the other.

4.5.1 Formulation of the Survey

The formulation of the survey questions was inspired by the literature and the work of previous research in this field.

Therefore, our survey consists of 12 questions with different types (closed and semi-closed).

This Survey is mainly divided of five parts:

- The first part studies the application of KM and TQM in the organization (Q1 and Q2).
 Q1: What is the level of application of knowledge management in your organization?
 Q2: What is the level of application of total quality management in your organization?

- The second part studies the impact of KM elements and practices on the effectiveness of the staff and on the performance of the company (Q3 to Q5).
 Q3: What are the elements of knowledge management in your company?
 Q4: What is the impact of knowledge management elements on staff effectiveness in your organization?

Q5: What is the impact of knowledge management practices on the performance of your company?

- The third part studies the impact of TQM elements and practices on staff efficiency and on the performance of the company (Q6 to Q8).

Q6: What are the total quality management practices in your company?

Q7: What is the impact of total quality management practices on staff effectiveness in your organization?

Q8: What is the impact of total quality management practices on the performance of your organization?

- The fourth part studies the criteria of staff effectiveness and its impact on the performance of the company (Q9 and Q10).

Q9: What is the impact of staff effectiveness on the performance of your organization?

Q10: What are the required criteria of staff efficiency on your organization?

- The final part studies the most used performance measurements methods in the organizations (Q11 and Q12).

Q11: What are the key performance indicators used in your company?

Q12: What are the methods used for data collection in your company?

In this questionnaire, we have opted to work with the LIKERT scale which ranges from 1 to 5 (very low impact "1", low impact "2", medium impact "3", high impact "4", very strong impact "5"). This scale is obviously recognized in several researches whether social, medical, political or other. It is practical and standard because it allows the respondent to have the freedom of response and diversity of choice.

4.5.1.1 Pre test of the Survey

Validation of the survey was carried out by professional and academic experts (Souheila Boukadida Logistics and quality manager in AD Tunisie Aeronotique Company, and Allaeiddine Hammouda business development manager in Medipol University).

We choose this sample because their work position could touch all the parts in the company related with the performance and the development. Those last checked the type of the questions, their understanding and consistency, the essential time to answer, etc. Several corrections have been worked out for our investigation up to the realization of this current one after two proposals for improvement.

The first version, which consists of the pre-test of our survey, was distributed to the academics experts which are Prof.MuratDuzgun and MrAllaeiddineHammouda. These experts are university professors and business managers.

This pre-test consists in checking the existing errors, either in the formulation of questions, or in their understanding. This step allowed us to modify some questions and change others.

After this versions of improvement, the survey has been disseminated to professional experts in both KM and TQM fields as the expert: SouheilaBoukadida (Logistics and quality manager in AD Tunisie Aeronotique company).The latter helped us to re-improve the questions asked while clarifying especially staff effectiveness practices and how managers tend to understand this type of survey. After some modifications and corrections, we got our latest survey version, which is the second version. This survey was released by subsequently, to Turkish and Tunisian companies from different sectors installed in both two countries.

4.5.2 Data Collection

Several methods for collecting data are used and cited in the works, but what is clear is that each method has specifications and characteristics depending on the subject studied. In this context, according to the literature review which examines the methods for measuring the performance of the company, this review showed that the creation of a questionnaire form is the most used method to collect the data and information; It is for this reason that we adopted the survey to collect the data for our study. The survey has been circulating since January 2022 and closed in April 2022 and it consists mainly on sending our questions to 300 companies divided between Tunisia and Turkey to finally receiving 50 completed answers.

4.5.3 Data Analysis

Any measuring instrument must satisfy specific conditions. So and to evaluate our measuring instruments we collected the data and codified the survey questions and answers. Then, we chose the analysis methods for our work in order to convert the answers of the questions into statistics graphs that allows us to identify the relationships between our variables and convert them to a scientific hypothesis to be used in future researches.

4.5.3.1 Companies Sector

As we can see in the figure 5.1, our survey was sent to different companies sectors such as industrial companies, education companies, energy companies, trading and telecommunication companies.

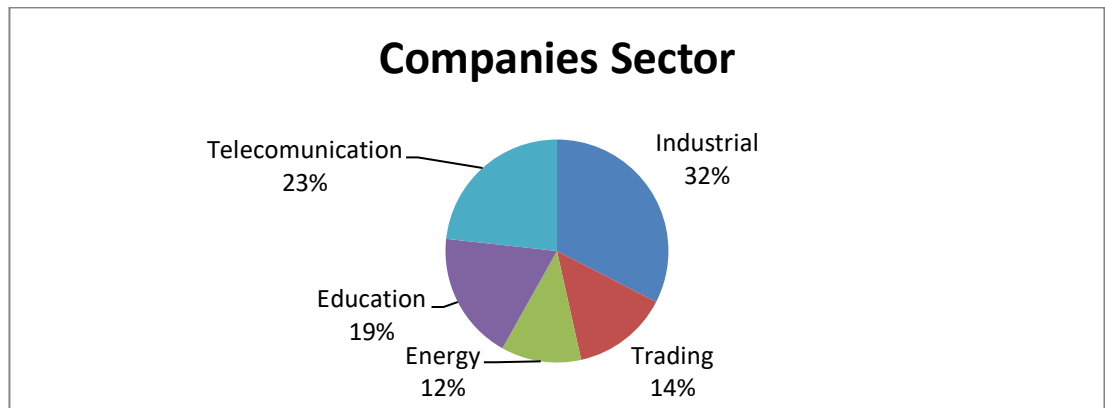


Figure 5.1 Companies sector

4.5.3.2 The Application of Knowledge Management and Total Quality Management

4.5.3.2.1 The level of Application of Knowledge Management

According to Figure 5.2, the highest percentage is dedicated to the high application of knowledge management (40%), Also a percentage of 26% is dedicated for very high application of knowledge management and 28% for medium impact. For the very low and low application, we had only 6%.

We can conclude from the analysis that most of companies surveyed had a high application of knowledge management.

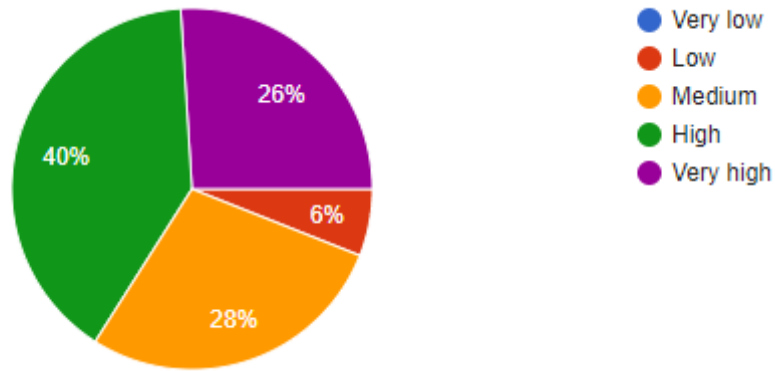


Figure 5.2 The level of application of knowledge management

4.5.3.2.2 The Level of Application of Total Quality Management

According to Figure 5.3, the highest percentage is dedicated to the high application of Total quality management (50%)., Also a percentage of 16% is dedicated for very high application for Total quality management and 22% for medium impact. For the very low and low application, we had only 12%.

- We can conclude from the analysis that most of companies surveyed had a high application of Total quality management.

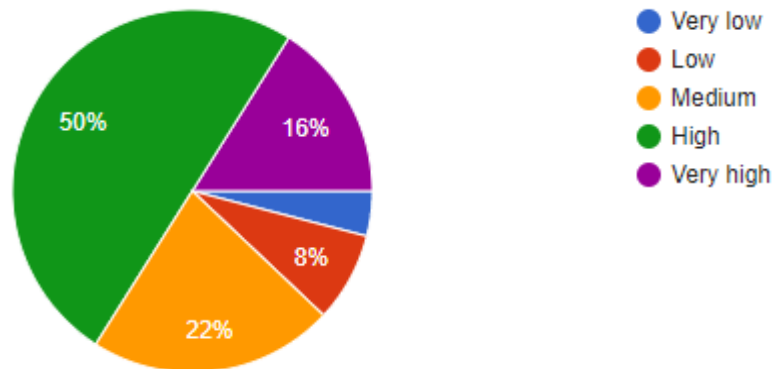


Figure 5.3 The level of application of total quality management

4.5.3.3 The Impact of KM on the Employee and on the Performance of the Company

4.5.3.3.1 The elements of Knowledge Management

Figure 5.4 show that the majority of respondents (54%) believe that the most important element of knowledge management is the knowledge sharing and the

knowledge transfer; also 44% of them add Applying knowledge as a second important element. Otherwise, Acquisition of knowledge and knowledge creation comes just behind with 20% and 24%. However only 14% of the respondents choose capitalization of knowledge and 10% of them choose others knowledge management elements.

- We can conclude from the analysis that most useful knowledge management elements are: knowledge sharing and the knowledge transfer / Applying knowledge / Acquisition of knowledge / knowledge creation.

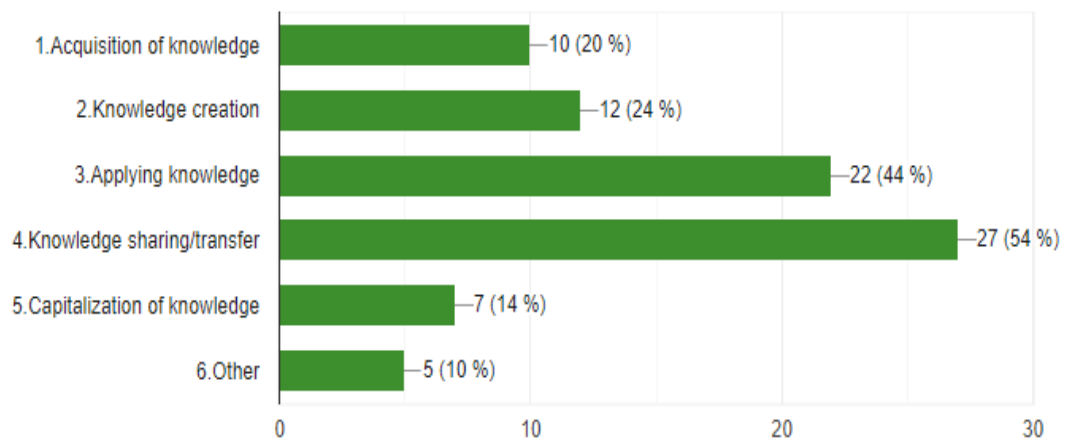


Figure 5.4 The elements of knowledge management

4.5.3.3.2 The Impact of Knowledge Management on Staff Effectiveness

According to Figure 5.5, the highest percentage is dedicated to the high impact of KM on the employee's effectiveness (58%). Also 16% of the participants voted for very high impact and 22% of them voted that Knowledge management have a medium impact on staff effectiveness. However, only a percentage of 2 % is dedicated for very low impact and a percentage of 10% is dedicated for low impact.

- We can conclude from the analysis that most of companies surveyed believe that knowledge management have an important impact on staff effectiveness.

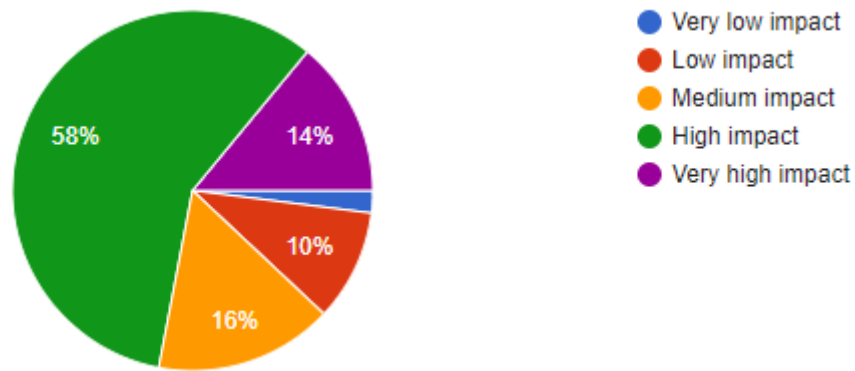


Figure 5.5 The impact of knowledge management elements on staff effectiveness

4.5.3.3.3 The Impact of Knowledge Management Practices on the Performance of the Company

According to Figure 5.6, the highest percentage is dedicated to the high impact of KM on the supply chain performance (46%). Also 20% of the participants voted for very high impact and 22% of them voted that Knowledge management elements have a medium impact on supply chain performance. However, only a percentage of 2 % is dedicated for very low impact and a percentage of 10% is dedicated for low impact.

- We can conclude from the analysis that most of companies surveyed believe that knowledge management practices have an important impact on the performance of the company

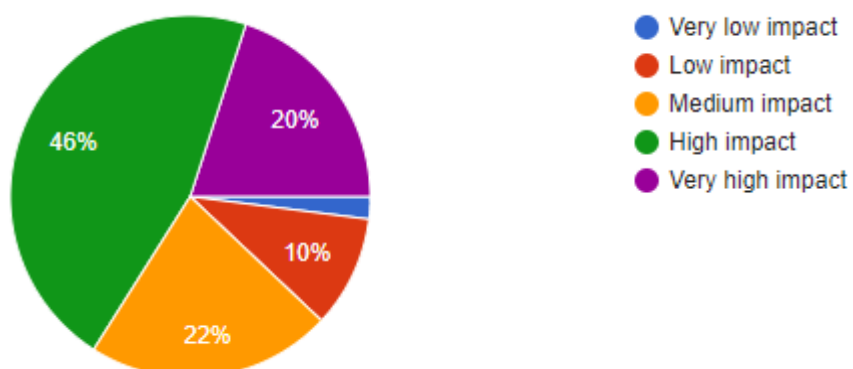


Figure 5.6 The impact of knowledge management practices on supply chain performance

4.5.3.4 The impact of TQM on Staff Efficiency and on the Performance of the Company

4.5.3.4.1 Total Quality Management Practices

Figure 5.8 show that the majority of respondents (46%, 42%) believe that the most important total quality management practices are the client focus, leadership and management.

Also comes in second place continuous improvement, process management, data analysis, data collection and human resource management. However, only 5 of the respondents choose other total quality practices.

➤ We can conclude from the analysis that most useful total quality practices are:

client focus / leadership and management/ continuous improvement/ process management/ data analysis/ data collection / human resource management.

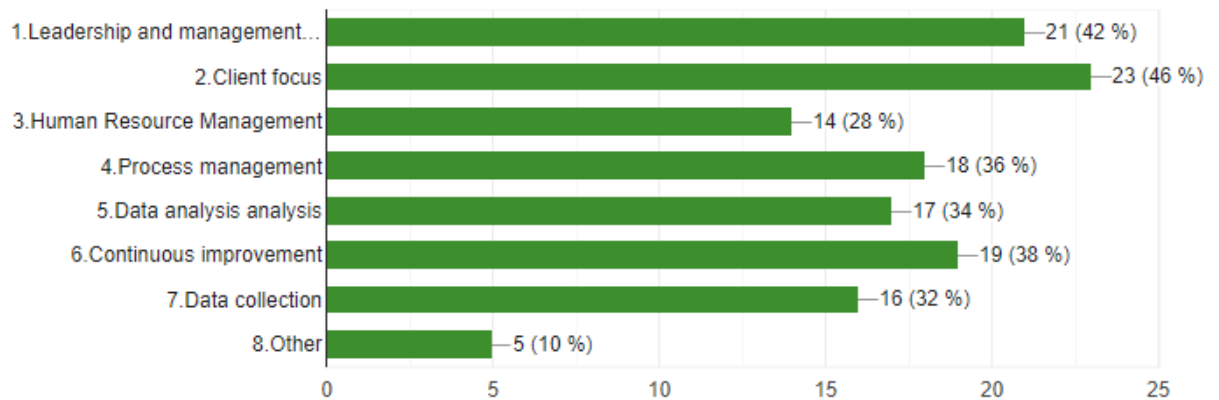


Figure 5.6 The total quality management practices

4.5.3.4.2 The Impact of Total Quality Management on Staff Effectiveness

According to Figure 5.9, the highest percentage is dedicated to the high impact of TQM on the employee's effectiveness (74%). Also 6% of the participants voted for very high impact and 12% of them voted that Total quality management practices have a medium impact on staff effectiveness. However, only a percentage of 2 % is dedicated for very low impact and a percentage of 6% is dedicated for low impact.

- We can conclude from the analysis that most of companies surveyed believe that Total quality management have an important impact on staff effectiveness.

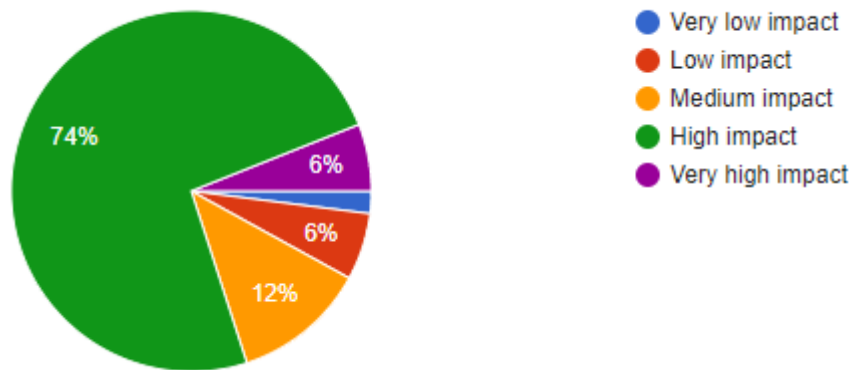


Figure 5.9 The impact of total quality management practices on staff effectiveness

4.5.3.4.3 The Impact of Total Quality Management on the Performance of the Company

According to Figure 5.10, the highest percentage is dedicated to the high impact of TQM on the supply chain performance (50%). Also 22% of the participants voted for very high impact and 18% of them voted that Total quality management practices have a medium impact on supply chain performance. However, only a percentage of 2 % is dedicated for very low impact and a percentage of 8% is dedicated for low impact.

- We can conclude from the analysis that most of companies surveyed believe that Total quality management practices have an important impact on supply chain performance.

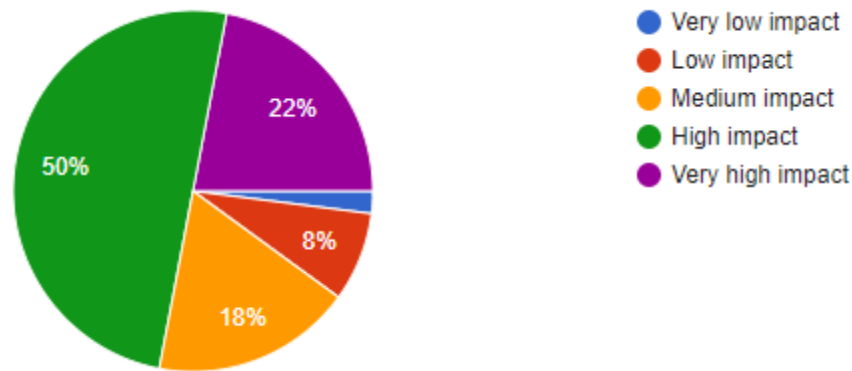


Figure 5.7 The impact of total quality management practices on supply chain performance

4.5.3.5 The Criteria of Staff Effectiveness and its Impact on the Performance of the Company

4.5.3.5.1 The Impact of Staff Effectiveness on the Performance of the Company

According to Figure 5.12, the highest percentage is dedicated to the high impact of staff effectiveness on the performance of the company (46%). Also 28% of the participants voted for very high impact and 18% of them voted that staff effectiveness have a medium impact on supply chain performance. However, only a percentage of 2 % is dedicated for very low impact and a percentage of 6% is dedicated for low impact.

- We can conclude from the analysis that most of companies surveyed believe that staff effectiveness have an important impact on the performance of the company.

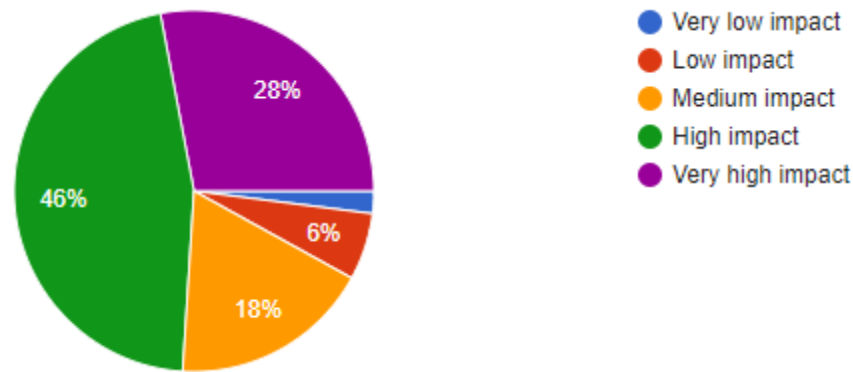


Figure 5.8 The impact of staff effectiveness on the performance of the company

4.5.3.5.2 The Criteria of Staff Effectiveness on the Performance of the Company

Figure 5.13 show that many respondents (54%) believe that the most important staff effectiveness criteria are Employee performance. Also comes in second place Integration and interaction with employees 48%, Continuous employee learning 44%, expertise of employees 38%, employee involvement and commitment and the use of technological resources 32%.. However, only 5 of the respondents choose other staff effectiveness criteria.

- We can conclude from the analysis that most useful staff effectiveness criteria are: employee performance/ integration and interaction/ continuous employee learning/ expertise of employees/ employee involvement and commitment /the use of technological resources.

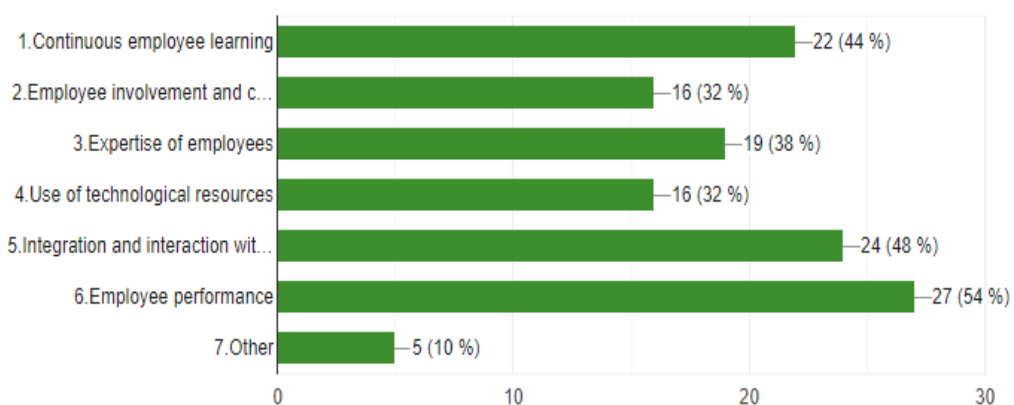


Figure 5.9 The criteria of staff effectiveness on the performance of the company

4.5.3.6 Performance Measurements Practices

4.5.3.6.1 Key Performance Indicators

Figure 5.14 show that the majority of respondents believe that the most important key performance indicators are Customer satisfaction 60% and quality 50%. Also comes in second place product or service cost 32%, financial performance and the ability of the company to progress 28%.And in the third place we have: return on investment 24%, performance of key processes 18% , human resource management and security information 14% . However, only 10% of the respondents choose other used key performance indicators.

- We can conclude from the analysis that most useful key performance indicators are: customer satisfaction/ quality/ product or service cost/ financial performance/ the ability to progress/ return on investment.

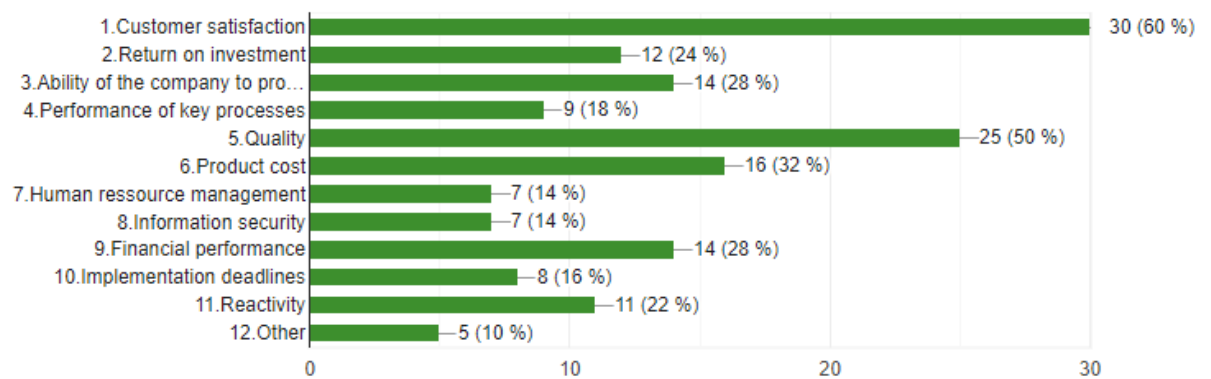


Figure 5.10 Key performance indicators

4.5.3.6.2 Performance Measurement Approaches

Figure 5.15 show that the majority of respondents (44%) believe that the most important performance measurement approaches are human performance improvement (HPI). Also comes in second place balanced Scorecard (BSC) and others 32%,.And in the third place we have: Scenarios 18%, hypothesis and Supply chain operations reference (SCOR) 16%. However, only 8% of the respondents choose interpretive structural modeling (ISM).

- We can conclude from the analysis that most useful Performance measurement approaches are: human performance improvement (HPI)/ balanced Scorecard (BSC).

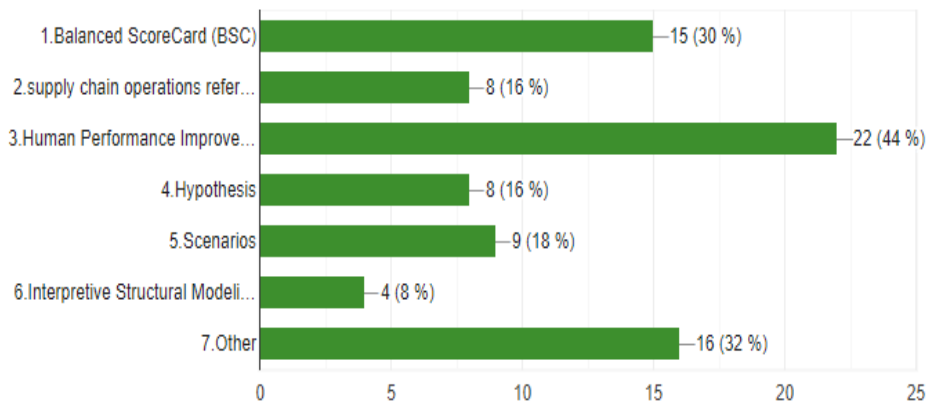


Figure 5.11 Performance measurement approaches

4.5.4 Interpretation of Results

4.5.4.1 Result

In this part we took on consideration our literature review and our results found and the analysis we did for each answer we had from the 50 companies that respondents to our questionnaire. During the analysis of the results, we reviewed the answers one by one so we could make a small comparison between the companies surveyed from Turkey and the companies surveyed from Tunisia and we did find that there is a remarkable difference in term of the use of knowledge management practices, total quality management tools and also employee interactions and value between companies in both countries. We noticed that Turkish companies such as Teleperformance, Reviver, Medipol university and Kastamonu Entegre Ağaç Sanayi A. Ş are more developed and more aware than Tunisian companies which are Jumia, Societec, Mets, Intelcom express and Délice.

Those differences are mostly regarding the importance of the knowledge and the training of the employees inside the company. Also about the importance of application of total quality practices and key performance indicators in the organization.

4.5.4.2 Hypothesis Identification

Hypothesis 1: The impact of TQM on staff efficiency

- **TQM has a positive impact on staff efficiency**

As we concluded in the figure 5.8 (The total quality management practices)and figure 5.9 (The impact of total quality management practices on staff effectiveness), the highest percentage by so far is dedicated to the high impact of total quality management on the employee's effectiveness and the employee performance.

Hypothesis 2: The impact of KM on staff efficiency

- **KM has a positive impact on staff efficiency**

As we concluded in the figure 5.4 (The elements of knowledge management)and figure 5.5(The impact of knowledge management elements on staff effectiveness), the highest percentage by so far is dedicated to the high impact of knowledge management on staff efficiency and employee performance.

Hypothesis 3: The impact of TQM on the performance of the company

- **TQM has a positive impact on the performance of the company**

As we concluded in the figure 5.10(The impact of total quality management practices on the performance of the company), the highest percentage by so far is dedicated to the high impact of total quality management on the performance of the company.

Hypothesis 4: The impact of KM on the performance of the company

- **KM has a positive impact on the performance of the company**

As we concluded in the figure 5.6(The impact of knowledge management practices on the performance of the company), the highest percentage by so far is dedicated to the high impact of knowledge management on the performance of the company.

Hypothesis 5: The impact of staff efficiency on the performance of the company.

- **Staff efficiency has a positive impact the performance of the company**

As we concluded in the figure 5.12(The impact of staff effectiveness on the performance of the company), the highest percentage by so far is dedicated to the high impact of staff efficiency and employee performance on the performance of the company.

CHAPTER 5

5. CONCLUSION

5.1 Main Research Results

For many years, the concern of companies was centered on obtaining financial results and the preservation of their brand images. However, the needs of customers are evolved, companies had to change their strategies and give more importance the quality of their products, the renewal of offers, the delivery times, the prices of sale, etc... After the evolution of the technologies involved in the industries and the appearance of new management philosophies, these companies called on experts to help their employees develop their knowledge, improve their skills and to be updated with the evolution of the market and its requirements.

This complex and innovative environment has led companies to take a special attention to all phases of the product life cycle, in particular the supply chain. Therefore, in addition to the mastery of cutting-edge technologies, a management efficiency of all supply chain, manufacturing, distribution and sales are all essential for developing a sustainable competitive advantage in the company. Also, an effective knowledge management is necessary in order to take advantage from the previous knowledge experiences and to acquire new one. Subsequently, total quality management based on human resources management, continuous improvement, information analysis and the correct use of key processes has become an obligation.

In this context, the problematic of this thesis was to study the impact of knowledge management and total quality management on staff effectiveness and the performance of the company. In this sense, we followed a methodology that allowed us to identify the elements of KM, TQM practices, staff effectiveness factors and elements of the performance of the company. We also studied the relationship

between these critical determinants in order to prove the potential impact between them.

In this context, we started by studying the four fundamental concepts of research problem, namely, knowledge management, total quality management, staff efficiency and the performance of the company. Subsequently, our literature reviews have been developed based on 49 articles, published during the period 2010-2018, studying the theme of the key factors of KM, the key practices of TQM and the performance measurement. In addition, a survey was distributed to nearly 300 Tunisian and Turkish companies integrating all industrial sectors. This questionnaire made it possible to collect 50 answers which will be the basis of our exploratory study. In addition, a conceptual model linking the basic concepts of our work has been developed based on the results of researchers obtained during literature reviews. This model was tested and adjusted after analyzing the results of our survey. The results of our survey made it possible to eliminate and correct some elements. The result helped us to test the links between the basic concepts of our study as “KM” knowledge management, total quality management “TQM”, staff efficiency “SE”, company performance “CP”.

After obtaining and analyzing the results, we have identified the following hypotheses:

- H1: TQM has a positive impact on staff efficiency
- H2: KM has a positive impact on staff efficiency
- H3: TQM has a positive impact on the performance of the company
- H4: KM has a positive impact on the performance of the company
- H5 Staff efficiency has a positive impact on the performance of the company

5.2 Limits

Despite the interesting results revealed in our work, there are still limits that will require future research. These limitations begin with the rigidity and lack of cooperation of the industrial officials contacted. Furthermore, the number of companies participating in our study is quite limited. Additionally, this research was carried out for all industrial sectors; however the analysis of the results by sector was not carried out since the sample is not representative for the majority of industrial

sectors. Also, we can point out, as we noticed during the dissemination of the survey or meeting with several managers in the companies, whether there barriers for the implementation of KM and/or TQM strategies that will have to be studied.

5.3 Research Recommendation

By analyzing the work presented in this thesis, some perspectives and avenues of research can be offered.

We suggest of the following points:

- Consider another data collection method in addition to the survey such as direct access to company data, despite the obstacle of confidentiality.
- Identify and analyze (causes, effects, etc.) the barriers to the implementation of KM and TQM in Tunisian and Turkish companies.
- Study and analyze the causes of the application of certain elements of KM, TQM and the efficiency of the staff and the negligence of some others.
- Disseminate the survey to companies in other developed and/or developing countries.

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APPENDIX

What is the level of application of Knowledge management in your organization?

Very low

Low

Medium

High

Very high

What is the level of application of Total Quality management in your organization?

Very low

Low

Medium

High

Very high

What are the elements of knowledge management in your company?

Acquisition of knowledge

Knowledge creation

Applying knowledge

Knowledge sharing/transfer

Capitalization of knowledge

Other

What is the impact of Knowledge management elements on staff effectiveness in your organization?

Very low

Low

Medium

High

Very high

5. What is the impact of knowledge management practices on the performance of your organization?

Very low

Low

Medium

High

Very high

6. What are the total quality management practices in your company?

Leadership and management commitment

Client focus

Human Resource Management

Process management

Data analysis

Continuous improvement

Data collection

Other

7. What is the impact of Total quality management practices on staff effectiveness in your organization?

Very low

Low

Medium

High

Very high

8. What is the impact of total quality management practices on the performance of your organization?

Very low

Low

Medium

High

Very high

9. What is the impact of staff effectiveness on the performance of your organization?

Very low

Low

Medium

High

Very high

10. What are the required criteria of staff efficiency on your organization?

Continuous employee learning

Employee involvement and commitment

Expertise of employees

Use of technological resources

Integration and interaction with employees

Employee performance

Other

11. What are the key performance indicators used in your company?

Customer satisfaction

Return on investment

Ability of the company to progress

Performance of key processes

Quality

Product cost

Human resource management

Information security

Financial performance

Implementation deadlines

Reactivity

12. What is the performance measurement approaches used in your company?

Balanced Scorecard (BSC)

supply chain operations reference (SCOR)

Human Performance Improvement (HPI)

Hypothesis

Scenarios

Interpretive Structural Modeling (ISM)

CURRICULUM VITAE

