

## QUALITATIVE STUDY OF THE PRACTICES USED IN THE IMPLEMENTATION OF THE QUALITY MANAGEMENT SYSTEM WITHIN MOROCCAN COMPANIES

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### Abstract:

The objective of this article is to show that project management practices present key success factors for implemented a Quality Management System (QMS) in Moroccan companies. In general, the organizations seem to look at the implementation of a quality management system as a project and they employ standard project management tools, albeit to a different extent and in different ways. Following a qualitative study in Morocco, the companies, whatever their sector of activity and size, use different practices in the framework of the project QMS. Information was collected from practicing managers. The data analysis shows that project management practices present a great opportunity for the successful implementation of QMS within Moroccan companies.

**Key words:** *practices of project management, survey of project management, qualitative study, project quality management system*

### INTRODUCTION

Morocco began to address the issue of quality in the 1990s with actions to raise awareness and promote quality among companies.

Required both by the increasingly competitive environment in which the Moroccan company evolves and by the increasingly demanding customer, quality is the sine qua non condition for the survival and success of a company both on its local and international markets. To keep its position on the market, the Moroccan company implements a Management System (quality, environment, health and safety at work ...). According to a survey conducted by AQM (Association of Moroccan Quality Engineer) 80% of Moroccan companies have opted for certification under the advice of customers, the parent company or under pressure from competitors. However, some companies get the certification label easily and others do not [1].

A large majority of studies have shown that the implementation of a QMS is a project that uses standard PM tools, although each company applies them in its own way. We conclude from the deep analysis between the two disciplines QMS and PM that there is a strong link between them and the use of PM practices can present a real opportunity for the success of the QMS implementation project [2, 3].

In order to analyze the data and to contribute to the conceptual understanding of the phenomenon under study, it is necessary to refer back to the results of the studies carried out in the two disciplines PM and QMS.

Also, an analysis of the practices used in Moroccan companies was carried out in order to ensure the relationship and impact of these practices on the successful implementation of a management system.

A survey was conducted among a sample of Moroccan companies, based on a constructed questionnaire and a qualitative study.

Therefore, qualitative research displays a comprehensive focus, it seeks to explain behaviour, motivations or to guide creative research [4].

The qualitative study takes into account the following points [5, 6]:

- Design and structure of the questionnaire;
- Sample and target construction;
- Conducting interviews with the selected Moroccan companies;
- Consolidation of responses;
- Analysis and interpretation of responses

The objective of this work is first to highlight the project management practices used during the project of management systems in order to verify the relationship

between these two concepts (PM and MS) following a qualitative study among Moroccan companies. The results obtained of this study will lead to the conclusion of the impact of PM practices on QMS.

## LITERATURE REVIEW

### Impact of practices 'project management on the implementation of management systems

To analyze our empirical data and contribute to the conceptual understanding of the phenomenon studied, it is necessary to reorient ourselves towards literature.

In fact, more and more companies are now using a project-based mode of operation, limited in time, benefiting from a budget and a team of their own [7], such as the project for the implementation of a QMS. Theoretically, there are several concepts of project management in companies. In the literature, there are few studies that address and measure the impact of project management practices on management systems projects [6, 7]. Indeed, the works dealing with effective management of the link between project management practices and the QMS are infrequent and empirical studies are still rare.

In the context of the strong competition between companies, the phenomena of globalization, the scarcity of resources, the increased requirement of customers ... project management is a necessary and indispensable answer [8].

Indeed, literary research has shown that:

- PMI defines a project as a temporary organization of a group of people aiming to create a product and/or service, or a unique result [9].
- The involvement and support of the staff is an important factor for the collective project of the management system [3].
- Improvement and the process approach concern all management systems reviewed during literary research (quality, environment, hygiene and health and safety at work, etc.) [3, 10, 11, 12, 13]. Also, all these systems use the PDCA quality circle [14]. This application is equivalent to the PMBOK project management guide processes: planning, execution, verification and control [15].
- There is real compatibility between ISO standards.
- In the case where there appear to be gaps, these are more nuances than differences [16, 17]. Several studies have been made to compare the different management systems and mainly the quality and environmental management systems. It was concluded that ISO 14000 is based on the 9000 series [18, 19].
- However, the aims are different; Quality management system meets the customer's requirements and the environmental management system meets the needs of stakeholders [16, 17, 18].
- The successful implementation of the majority of management system projects (quality, environment, energy, hygiene and health and safety at work, etc.)

depends on factors relating to project management practices, namely: the strong participation of all staff, the establishment of a project plan, the support of top management, the control of costs by reducing losses and waste, the knowledge of areas relating to management systems through training and awareness raising [3, 11, 13, 20, 21, 22].

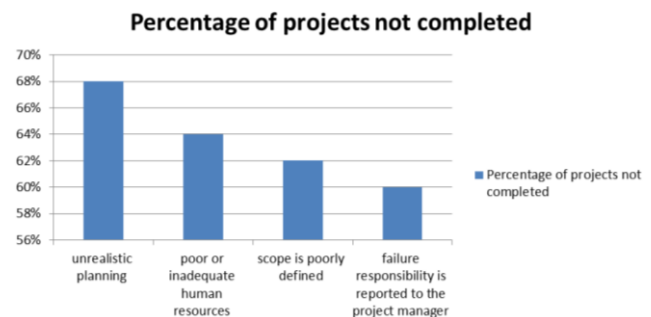
- Employee resistance, lack of resources, insufficient knowledge about these programs, inadequate or excessive documentation, costs of implementation and certification, are the main obstacles encountered during implementation [1, 10, 12, 20, 21, 22].
- Several researches have been conducted in the areas of project management and management systems. However, these researches dealt with both domains in a global way and they never defined the relation between the practices of project management and the project of management systems [3].

But by analyzing the two domains, it was deduced that the management system project uses project management practices.

We also note from the literature review that some projects may not meet the agreed completion time and project schedule and others may not meet the needs of the end user [23].

The main causes of unsuccessful projects are shown in the figure below.

The Figure 1 shows the main reasons for non-completion of projects with their percentage.



**Fig. 1 Failure of projects according to the main reasons**

Source: [3, 24].

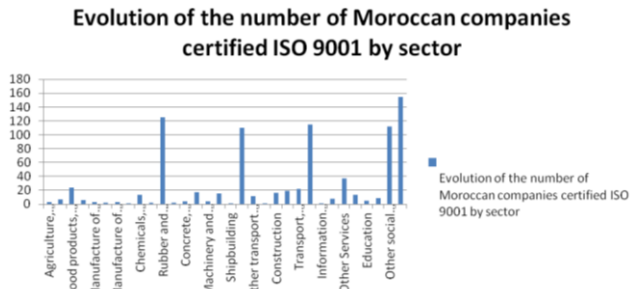
- Failure to plan a project properly has a strong impact on the project time, cost and budget initially determined [8];
- It should be noted that any change in one component of the project impacts on all elements of the project;
- Evaluating the success and performance of a project means checking that the objectives, goals and financial and material resources defined at the start of the project have been respected and achieved;
- We speak of success and performance of the project if the deviations of the above-mentioned criteria are tolerable. It is therefore necessary to define tolerance thresholds for each criterion;

- These criteria emerge from project management practices;
- Hence the importance of project management in the project of management systems;
- Also the management practices have a positive impact on the management system project which can lead to an opportunity in the success of this type of project.

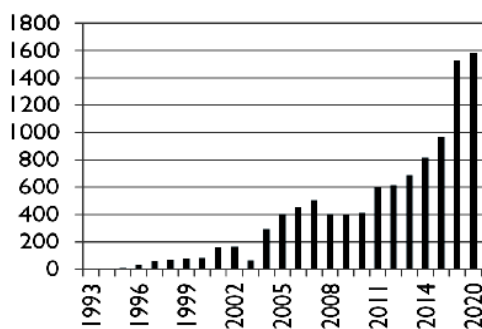
### QUALITY IN MOROCCO

Like developing countries, Morocco began to address the issue of quality in the 1990s with awareness raising and promotion of quality among businesses. In Morocco, the need to ensure strong and sustainable economic growth is emerging as a solution to several social problems that are jeopardizing the country's future. However, Moroccan companies are aware of the usefulness of quality to preserve their sustainability. They must give themselves the means to tackle the complexity of their environment by building an organization that is sensitive to the changes, pressures and opportunities that exist around it. Having such an organization implies a permanent search for the optimal satisfaction of customers, shareholders, staff, but also the community. Quality is one of the essential management tools to meet these needs [25].

Certainly the number of ISO certified companies has increased during the last decades (Figures 2 and 3), however Morocco is ranked in 4<sup>th</sup> position after South Africa, Egypt and Tunisia.



**Fig. 2 Number of ISO 9001 certifications according to the sector of activity of Moroccan companies on 2016**  
Source: [19].



**Fig. 3 Number of Moroccan companies certified ISO 9001 between 1993 and 2020**  
Source: [19].

Moroccan companies have a number of shortcomings as to the adequacy of their project management practices with the requirements of setting up a QMS.

### METHODOLOGY OF RESEARCH

Our approach is based on a qualitative study which consists in better defining the phenomena studied in a Moroccan context.

The aim is to obtain background data through the conduct of interviews. The interview will allow for the collection of verbal data, which are collected through pre-prepared questions.

This research method focuses on interpretations, experiences and their meaning.

This qualitative research technique allows for an understanding of the subject based on interpretations of the data collected from the respondents' testimonies.

The process of the qualitative study studied above is broken down into three working phases:

- Collection of information on the basis of the questionnaire drawn up: this phase is very important because the credibility of this study depends on the quality and breadth of the information collected;
- Processing the information: synthesizing the data collected to produce a relevant analysis and interpretation;
- Analysis of the information: this will allow developing the conclusion.

Qualitative research is therefore a kind of tool designed to bring out the attitudes of companies and/or to find out their behavior and opinions on a given subject. It generates observations or even hypotheses that can help to understand the phenomenon studied in relation to a context or situation [4].

This study started in 2017 and lasted almost 6 months.

### Development and structure of the questionnaire

The idea of a questionnaire springs under the pressure of a general problem to be solved, of the search for answers to the question one asks oneself, of a need for information on a psychosocial problem [26]. In order to carry out a questionnaire survey, it is then necessary to specify the intention, to delimit the object and to better know our target, which will allow a more accurate estimation of the necessary means and a well-defined questionnaire. The aim of this interview guide is to focus on the key questions, the objects of investigation in relation to the research problem:

- The questionnaire needs to be easy to understand and simple to complete;
- The questionnaire contains closed and open questions;

- The concepts used are related to the objectives of the survey and make it possible to obtain precise and coherent answers;
- The questionnaire is mainly based on the processes and knowledge areas of the PMBOK.

The beginning of the questionnaire was reserved for the overall framework of the company and the presentation of the respondent.

The questionnaire also contains a second section for the respondent to express the expected benefits of a management system project.

The last part of the questionnaire was designed to highlight the practices used in the management system project in order to assess the impact of these practices on such a project.

the questions focused mainly on the processes of the PMBOK guide [15] and the requirements of the ISO 9001 standard [27].

**Constitution of the sample and the target**

The universe of the survey is called the whole human group concerned by the objectives of the survey. It is in this universe that the sample will be cut. The universe is also called the population of the survey. Determining exactly the population is not necessarily self-evident. It necessary to specify the age group to be surveyed, definitions vary from one author to another, and with them the beginning and/or end of each of these age groups [28].

Our sample targeted different Moroccan ISO 9001 certified companies of different sizes and operating in different sectors. This choice will allow to get a first understanding of the behavior of Moroccan companies towards the ISO 9001 management system project whatever the activity sector and the size of the company.

This study has limited to 7<sup>th</sup> enterprise because it arrived at the saturation.

To carry out the interview, it is necessary to target and define the people to be met or contacted.

In order to succeed in the interview and to interact with the individuals, certain communication processes must be respected to help keep the focus [29].

In our case, the respondents held the positions mentioned in the following Table 1.

**Table 1**  
*List of positions held by respondents from each company interviewed during the qualitative study*

Company	Person interviewed
1	General Manager
2	Organization and continuous improvement Manager
3	Quality Manager
4	Quality Manager
5	Quality manager
6	Quality Director
7	Responsible of Quality

**Collecting information**

To make the interview a success, the place, date and time of the meeting had to be agreed with the interviewer.

In order to get an interview, it is important to present the research work in a concise and clear way.

It is also important to make sure that the interviewee understands how he or she can contribute to the research objective.

On the day of the interview, it is useful to respect the specific process of communication and human interaction by following the points below:

- Introduce and briefly recall the research work and the interest in the company where the interviewee operates;
- Start the interview by applying the hierarchical questioning (often from the most general to the most precise question);
- Take notes;
- Use the established questionnaire to prepare the next question;
- Reframe the interview if necessary;
- Once the interview is over, thank the interviewee and try to put them in a confident frame of mind by telling them that the information collected will be treated confidentially and anonymously.

When the interview is over, the next step is to exploit the data collected for use in the research study. The consolidation was recorded in an excel table.

**RESULTS OF RESEARCH**

**Analysis and interpretation of the data**

In order to achieve the research objective, the following steps were taken:

- Reread the notes taken during the interview and try to finalize them by identifying all the important elements for the study;
- Transcribe the interview;
- Define the contributions of the interview by entering the notes in the excel table (Table 2);

**Table 2**  
*Table consolidating responses*

Questions	interviewer 1	interviewer 2	interviewer 3	interviewer 4	interviewer 5	interviewer 6	interviewer 7

- Make comparisons and divergences between the different interviews in the excel table;
  - Each column indicates what a person answered to a question;
  - Draw conclusions in relation to the research topic.
- This step involves interpreting and analyzing the answers to draw conclusions and useful information.

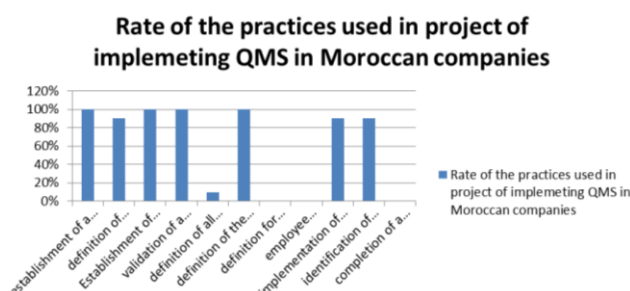
– To implement a quality management system project in Moroccan companies, the objectives and issues are clearly defined and mapped out by the top management through working meetings. This enables the company to comply with the ISO 9001 standard. The result of the working meetings is a document signed by the general manager in the form of a quality policy

- or commitment. It was found that both concepts, project management and management system, are based on the same phases. Project management is based on planning, coordinating and implementing, checking and controlling all aspects of the project, as well as modifying it if necessary, involving all participant to achieve the project objectives safely, on time and within the agreed budget and performance criteria [30]. These phases are in line with the PDCA quality circle of the management system.
- To launch a management system project, Moroccan companies apply the PMBOK 4.1 "Elaborate the project management plan". Most companies appoint a person to take charge of the management system project and draw up a report describing the various aspects of the project (deadlines, risks, issues, objectives, resources, budget, ...) [31]. This report is communicated to the relevant persons in the company.
  - Moroccan companies use the PMBOK area "Project Stakeholder Management" to define the stakeholders for the management system and understand their needs. The main stakeholders of Moroccan companies are: the end customer, the staff, the service providers, the government and the control and certification bodies.
  - It was found through this qualitative study that the majority of Moroccan companies apply the chapter of the ISO 9001 standard that corresponds to defining responsibilities, roles and authorities for the implementation of the management system. This requirement is in line with the application of the PMBOK's "Project Human Resources Management" domain. It has been found that the responsibilities defined in the management system project do not have the necessary knowledge of project management, especially the project manager.
  - Studies in the field of project management have shown that for a project to be successful, it is important that the project manager has the personal skills and abilities to take the necessary actions to define the right organization for the project [24, 30, 32, 33, 34].
  - Moroccan companies initially defined a plan for the implementation of the management system project as shown by some studies [35]. This planning was done through meetings with the designated project organization at the start of the project.
  - It has been pointed out that this planning does not include all the information related to the project, which may impact on the management and the success of the project implementation, as companies find themselves with a lack of visibility in certain phases of the project.
  - To address this problem, some companies are updating the previously defined schedule. Some research findings state that project planning should be evaluated and reviewed regularly with precision [35]. Therefore, planning techniques and associated formalizations deserve to be considered [36, 37].
  - Team members know what tasks they need to work on, but they have no idea what the priorities are. The schedule must be accurately evaluated and reviewed regularly [35].
  - To implement the management system project, it is important to select and limit the activities concerned by the project. Moroccan companies comply with this requirement.
  - The top management of each company defines the perimeter according to its stakes and its context and traces this in the policy and the commitment.
  - The management of human resources within the interviewed companies was managed by the designation of an internal organization and the definition of responsibilities.
  - In order to familiarize all staff (including the members of the organization defined) management system project, training and awareness-raising sessions were planned and carried out.
  - However, conflict management and the availability of project team members were resolved as the project progressed. It was found that the project manager played a very important role in managing conflicts between staff. Conflict management was not integrated into the project planning. This has an impact on the timeframe. Companies do not know which employees are overworked and which ones are available. Some tasks are delayed and others finish in advance. This lack of visibility on the workload of the team is detrimental to the smooth running of the project. This confirms that the project manager does not have the necessary skills to manage such a situation. Furthermore, the project manager intervenes to alleviate overwhelmed collaborators by asking more available colleagues to come to their aid. In addition, thanks to the tools put in place (time sheet for example), companies can know the amount of time already spent on a task, as well as the time remaining before its expiry and thus anticipate delays [37, 38].
  - In order to retain staff on the interest of the management system project, Moroccan companies ensure broad communication. A team that does not communicate will shut themselves in and fold back on itself. The working atmosphere deteriorates and may have an effect on the smooth running of the project. The communication is an essential element to succeed. It allows you to collaborate effectively and achieve your goals [39, 40]. If you work on large projects that affect many people with different profiles, a communication plan is essential to help you master your communication [41].
  - Risk management is a key requirement of the new version of ISO 9001. A management system is based on good risk management that takes into account delivering a compliant product or service over time.
  - It is true that Moroccan companies are aware of the risks that threaten them but not all of them have identified them during the planning process, which

causes a delay in the project deadline. Only the companies that are ISO 9001 version 2015 certified have been able to identify and trace the risks and define the control and monitoring methods. These companies represent 90% of the total respondents. It is important in each project to put in place effective risk management and provide a maneuver in the event of a problem [30, 42]. It is better to have a wider schedule and finish ahead, rather than the other way around [19].

- Also, there is the term "opportunity" which is integrated in the QMS and represents the positive elements of the company. Opportunities are managed in the same way as risks.
- Moroccan companies use tools to monitor and control the management system project such as: updating the previously established schedule, process review, management review, internal audits.
- At the end of the management system project, it was noted that Moroccan companies had not carried out an assessment of the project's completion. This does not allow concluding the lessons learned during this project and thus capitalize the key factors of success. This component is well described and detailed in the PMBOK closing process.
- During the qualitative study, it was found through the analysis of the Moroccan companies' answers that some practices of the PMBOK project management guide. While these companies have not used a project management guide and do not have the necessary knowledge on this aspect and in particular the project manager who is not trained on the techniques of project management. This joins the 46% of cases where there is no real reference system or project management method. There too, we are moving away from logic of structural control [43].

Based on the collection of the different responses, Figure 4 shows the main part of the projects used during the implementation of the QMS.



**Fig. 4 Main Practices used in project of implementing QMS in Moroccan companies**

## DISCUSSION AND CONCLUSION

Most Moroccan companies do not have a project management standard or reference to respect. Some use a combination of standards. Some companies have defined their own internal project management process. These companies are obliged to respect the guidelines of the parent company [44].

It was raised during this qualitative study that the QMS presents an important factor for the sustainability and performance of Moroccan companies, this was also confirmed by several researchers including Dick, Heras and Casadesus in 2008 [45] who showed that ISO 9001 certification positively influences the performance of companies. Furthermore, Aba, Badar and Hayden concluded in 2016 that ISO 9001 certified companies had better operational performance compared to non-certified companies [46].

Project management practices are techniques that help project managers to improve the overall quality of their projects, to control the content, to reduce the timeframe, to optimize their estimates, to anticipate more and to better manage the project stakeholders [47].

It should be noted that project management is a concept that is becoming more and more mature and institutionalized thanks to project management institutions and the introduction of guides such as PMBOK and Prince2.

It was found through the qualitative study that Moroccan companies use project management practices in the implementation of the quality management system project. However, they do not refer to project management guides because the members designated for the implementation of the QMS project and mainly the project manager have no knowledge of the said project management guides.

This shows that the use of project management practices contributes positively to the implementation of a QMS and even its success.

It can therefore be concluded that project management practices present a strong opportunity for the implementation of a QMS in Moroccan companies.

In order to confirm this hypothesis, it is necessary to complete the qualitative study by a quantitative study.

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