



**AL KUT JOURNAL OF ECONOMIC AND ADMINISTRATIVE
SCIENCES**

Publisher: College of Economics and Management - Wasit University



**Evaluation of Project Quality Management Requirements According to the
International Standard (ISO 10006: 2003) - A Case Study - at AL Mansour state
Company for Constructional Contracts for the Fast Traffic Building Project**

Luay Naser Jebur*

Faculty of Business Economics, Al-Nahrain University

E-mail addresses: luay-n@nahrainuniv.edu.iq

Abstract:

Projects play an important role in the development of the country; the development of projects depends on the quality of the projects. Therefore, this research aims at identifying the extent of Almansour state company for constructional contracts for the Fast traffic Building Project by implementing the project quality management according to the international standard (ISO 10006: 2003), Where projects in recent years in Iraq have gained importance, especially after the year (2003), Resulting in increased projects and because of the high profit margin of enterprises entered many companies in the market leading to increased competition, Which strongly imposes on Almansour to improve its operations by implementing the project quality management according to the international standard (ISO 10006: 2003), In order to obtain high quality and profitability. The quality results of these projects do not conform to the specifications specified in advance due to the lack of attention by the quality management company in its projects according to the international standard (ISO 10006: 2003), and this is the problem of the research. And that the importance of the research came to achieve the project of Almansour without deviating from the predefined quality specifications and the minimum number of resources possible.

This research reached a number of conclusions and recommendations, most notably the lack of concern to quality management in their projects in accordance with the international

standard (ISO 10006: 2003), Therefore, appear the recommendations necessity to implement and improve quality management in their projects in accordance with the international standard (ISO 10006: 2003), in order to achieve the end of the project with the required quality by reducing time, cost and resources.

Keywords: Quality, Project Quality Management, international standard (ISO 10006: 2003).

Introduction :

many projects organizations have encountered during the past decades, great challenge to achieve the high quality and excellence of their projects In recent years, projects organizations have gone through a difficult period Which are exacerbated by increased technological and social changes These changes have a broadly effect on the projects processes within project processes, therefore, many management applications have been used to countered the challenge facing projects organizations, therefore the need to a dependence quality management in their projects has increased according to the international standard (ISO 10006: 2003). As an initiative to solve quality problems and meet the needs of customers, Mansour Company currently needs more attention to implement and improve the quality management in its projects according to the international standard (ISO 10006: 2003), For the purpose of briefing all aspects of the research We have addressed this in four sections, dedicated first section to presenting the research methodology, The second section included the theoretical aspect of the research variables It included the concept of quality, project quality management, international standard (ISO 10006: 2003) and project quality management processes, While the third section included the practical aspect of the research, the analysis of data on the reality of quality management in the project, analysis of the mean data and the percentage of application and size of the gap, while the fourth section included the most important conclusions of the research as well as the recommendations.

The first topic: 1- Research methodology:

1-1-Research problem: In Iraq There are many projects launched each year to develop the country. These projects usually involve large investments, but these projects have problems in quality for many years, Every year is spent a large amount of the budget on infrastructure and other development projects, Therefore, there is a need for additional investments in order to eliminate defects and maintain work by paying attention to the implementation and

improvement of quality management in projects in accordance with the international standard (ISO 10006: 2003), Al-Mansour Company has a desire to stay and compete so it must work for quality requirements through quality management in its projects according to the international standard (ISO 10006: 2003), Al-Mansour projects face a problem that some of the results of its projects do not comply with the specifications specified in accordance with the international standard (ISO 10006: 2003), and through the research problem many of the following questions arise:

1. What is the current reality of applying the international standard (ISO 10006: 2003) in the researched company?
2. Does the International Standard (ISO 10006: 2003) apply mainly and widely in the researched company?
3. To what extent is the company researched aware, such as an obligation to pay attention to the international standard (ISO 10006: 2003)?
4. What are the strengths and weaknesses of the researched company?

1-2- Research objectives: The research objectives originate from the research problem and they are summarized in the following objectives:

1. Knowing the range of commitment of the researched company to applying the international standard (ISO 10006: 2003).
2. Determine the level of the clauses that have been applied.
3. Determine the strengths and weaknesses of the researched company.
4. Creating consciousness for project quality management according to the International Standard (ISO 10006: 2003).

1-3- research importance: The research importance originate from the research provides to the researched company from the following benefits:

1. Realizing the project without variation from the pre-determined quality specifications.
2. It helps in achieving all the required needs of all stakeholders.

3. The determination of the current state of the international standard (ISO 10006: 2003), will determine for the company the strengths and weaknesses of the project.

4. Realizing the project as much as possible with the least possible number of resources.

1-4-Research Hypothesis: The application of all the main requirements sections in accordance with the international standard (ISO 10006:2003) leads to obtaining the application of project quality management.

1-5- Society and Sample of Research: Al-Mansour company Research Society Being one of the market leaders in the field of projects as for the research sample, it included eight managers in Al-Mansour Company Their specifications were manager, Assistant manager, project manager and engineer to deal with the approved checklists for the International Standard Paragraphs (ISO 10006: 2003).

1-6- Data sources of the analytical practical aspect: The research dependence the following sources in collecting data on the practical side, which are:

1. Personal interviews with managers of Al-Mansour Company, project managers and engineers in the company.

2. Checklists which are a major tool for data collection and analysis prepared on the basis of the clauses of International Standard (ISO 10006: 2003)[1], Publish by the International Organization for Standardization (ISO) on (15/6/2003), the second version, This list consists of four divisions representing projects quality management operations according to the international standard (ISO 10006: 2003), The first division consists of ten activities of the International Standard activities (ISO 10006: 2003), As for the second division, it includes five activities of the international standard activities (ISO 10006: 2003), As for the third division, it consists of twenty seven activities of the international standard activities (ISO 10006: 2003), while the fourth division includes four activities of the international standard activities (ISO 10006: 2003), With different activities paragraphs for each division according to the clauses of the International Standard (ISO 10006: 2003), To achieve accuracy in the use of checklists in analyzing the data obtained, the seven-step scale was used to identify the extent of application and documentation by Al-Mansour Company of the clauses of the International Standard (ISO 10006: 2003), And compare it to the clauses of the International Standard (ISO 10006: 2003), Where the scale of the paragraph is (Entirely Implemented and Documented Entirely, Entirely Implemented and Documented

Partially, Entirely Implemented and not Documented, Partially Implemented and Documented Entirely, Partially Implemented and Documented Partially, partially Implemented and not Documented, not Implemented and not Documented), Which weight ranges from the highest weight by(6) degrees, and the lowest weight by (0) degrees to the paragraph.

1-7- Analysis manners: The research used the following manners to perform the checklists analysis for the purposes of analyzing the application and documentation of the paragraphed of the International Standard (ISO 10006: 2003), which are:

1. Weighted mean: To know the degree of application of activities for each division from divisions of application.
2. Application percentage: to determine the proportion of the researched company applying to the activities of each division from divisions with the international standard (ISO 10006: 2003).
3. Size of the gap: To determine the application of the paragraphed respondent with the international standard (ISO 10006: 2003).

The second section: 2- Theoretical side:

This section deals with explanation of the concept of quality, project quality management and international standard (ISO 10006: 2003), and project quality management processes.

2-1-The concept of project quality management: When we want to explain project quality management, the first thing we should put in place is defining quality, As quality is an abstract concept and it is not easy to define That's where the consumer is the one who can define quality because of the one who gets it, And when all the needs are met and all expectations are met or exceeded then we consider that we have obtained the quality[2], The concept of quality played an important role in business administration literature, Whereas the quality of the product and the improvement in production in the world market began in Japan in the 1950's [3], Quality is one of the main components of project success and quality is not promises but rather work to fulfill them [4], In the past (30) years in the field of quality, a revolution occurred in the understanding that quality no longer refers only to the quality of the product or service, But it also refers to other aspects such as quality leadership and quality in projects and emerged and put this new approach to respond to the increasing requirements of the beneficiaries[5].

There are several definitions of the concept of quality that represent conformity with requirements [6], It is a degree to the characteristics appropriate or designed for project management and its products to meet the requirements, needs and specifications of stakeholders, As the quality of projects is extremely important in developing countries where annually large numbers of investments are made for projects [7], And that quality management is all the coordinated activities to orientation and control the organization in terms of quality [8], As the quality management focuses on prevention, its objective is to work (100%) free from mistake, accidents and losses [4], Quality management includes efforts to achieve the required level of quality for the planned and organized product [9]. As for the project for the organization, the organization is supporting many of the projects undertaken by the company in different geographical locations and managed by the project managers and is completely independent But, there is a great dependence on the support of the head office as well as each project is affected by the policies and culture of the main company organization [10], The project defines a series of related activities directed towards main outputs [11], The objective of the project is to do the right things from the first time, eliminate waste and re-work, To achieve this it is necessary to focus on operations and the process is a task or set of tasks [9], There are three determinants of the project called (Iron Triangle) which are (time, cost, and field) [12], All three elements are equally important to the success of the project and to project managers, As project managers always try to balance the three elements to meet the project objectives, but perhaps it makes exchanges between the three elements during project implementation in order to achieve the objectives and achieve customer satisfaction [13].

2-2- Project Quality Management: Project quality management is one of the most important functions, And that the high quality of the project is necessary in every activity and at all individual levels, organization and society, This means paying attention to the project's quality management at every stage of the project in order to ensure that the customer will get the final product according to the required requirements [14], Quality management in projects should be concerned with maintaining quality at the required level in order to obtain customer satisfaction, which in turn leads to long-term access to competitive advantage and the stay and continuity of the organization [9], Whereas, the quality management in projects is all activities of the management functions, especially the higher management that Determined the policy and objectives of quality and responsibilities for all members of the organization [4], It is defined as all the operations and activities implemented in the organization that determined quality policies, objectives and responsibilities and fulfill them by planning and improving quality in light of quality assurance and control [8]. The project quality management includes the following: [15]

1- Quality planning: is to determine the quality specifications and requirements of the project and determine how to meet them. The primary documentation of the project quality is the quality management plan, and it is best for the project team to formulate an individual quality management plan that appropriate the project needs [16].

2- Quality assurance: It is an application of planned and organized quality activities [13]. Quality assurance includes periodic inspection of project performance in order to ensure that the project meets the appropriate quality specifications. Quality assurance focuses on reducing the possibility of mistakes and potential mistakes and Initialization all necessary conditions in the organization for Achieving the quality of the product and the planned and required service [14].

3- Quality Control: It is the monitoring and recording of the results of the implementation of quality activities in order to evaluate performance and orientation necessary changes, Control activities should identify the reasons for poor process or product quality and orientation procedures to take to treatment them [15], and the importance of monitoring specific project results determines that the results do not have variation and the results provide a basis for taking corrective procedures and the results provide feedback to the quality assurance process [16].

2-3- International Standard (ISO 10006: 2003) Project Quality Management:

The International Organization for Standardization (ISO) is an international organization for providing specifications [7], Where it was established in (1946) and the number of its members (91) and began work in (1947) and was chosen as the city of Geneva in Switzerland as its head office [17]. It is concerned with setting general international standards for international trade, communications and manufacturing, and its structure includes (120) member states, and published its first quality standard in (1987) [18], It is the International Standard (ISO 9000), which represents the series or family of the International Standard, which consists of five specifications, including three contractual models (ISO 9001, ISO 9002, ISO 9003) and two that include guidelines (ISO 9000 & ISO 9004), In view of the importance of this standard, the Technical Committee (ISO / TC 176) for Quality Management and Quality Assurance decided to develop a series of specifications (10,000) to support the standard (ISO 9000) [1], and one of this series is the international standard (ISO 10006: 2003), which was Put By the International Organization for Standardization [9], It was prepared by the Technical Committee (ISO / TC 176) for Quality Management and Quality Assurance and in particular Sub-Committee (Sc 2) for Quality Systems [1], under the title of Quality Management Systems - Guidelines for Quality Management in Projects that is, this standard provides guidance for quality management in the project [19], which is the second edition of the International Standard (ISO 10006: 2003), which eliminates

and replaces the first edition (1997) [1], It determine the principles and applications of quality management and their implementation, which are important for their impact on achieving quality objectives in projects that can be implemented in project operations, International standards (ISO 10006: 2003) can be applied to projects that take many forms, including small, large, simple and complex projects, and from being individual to the project or being part of the program or portfolio of projects. The International Standard (ISO 10006: 2003) is not, in itself, a guide for project management but rather guidelines for quality in project operations, and quality guidelines for operations related to the project product [15].

The International Standard (ISO 10006: 2003) consists of eight main clauses, (27) sub-clauses and (61) sub-clauses, the main clauses from one to three only concerned with the descriptive background, such as the field of documentation and normative references as well as terms and definitions, These clauses have been removed from the project quality management processes because they contain only information and not operations for implementation. As for the fourth clause, project quality management systems will be applied to all operations in the fifth, sixth, seventh and eighth main clauses, and also in the international standard (ISO 10006: 2003), beginning The first sub-clause such as (1.1.1,1.2.1,1.3.1) is a generic clause [20].

2-4- Project quality management operations according to the International Standard (ISO 10006: 2003):

Project operations are those operations that are necessary for the project as well as are necessary to achieve the project product, Therefore, quality means in the project the quality of the project process on the one hand, and on the other hand the quality of the final project is represented by the product, both of which need and require systematic treatment, and failure to meet either of these aspects can lead to significant impacts [21], The project quality management processes cover the project needs in terms of time, cost, scope and the needs of the project product or project needs by determine the requirements [13], As the project is surrounded by different stakeholders, the owner, the contractor, the supplier, the legislative bodies...etc., and each stakeholder has requirements in of total cost, timely delivery, specifications, and reliability of the project's products, these requirements collectively are called (quality requirements), and the range to which they meet the project and its products are called (quality level)[7], To meet the different requirements of different stakeholders, project managers should involve them in project planning in order to increase the efficiency and effectiveness of decisions taken during the life cycle of the project and work to improve interactive

relationships between main stakeholders, as the viewpoint of customers from stakeholders of the level of quality is very important to improve quality of projects [3].

The quality management in projects includes three main elements are the stakeholders in the project and fields of knowledge, project techniques and tools, as the fields of knowledge are formed through the quality management processes of the project and these processes are (core functions and facilities functions), core functions includes time, cost, and scope. These functions lead to specific project objective and are supported by facilities functions that meet the various objectives that includes resource management and human resources management, communication, risk, and procurement, and that filed of knowledge use project techniques and tools [20], and that the aim of the International Standard (ISO 10006: 2003) is to provide orientation regarding concepts, elements and guidelines for quality applications in projects through the eleven processes, and that the success of the project depends on the implementation of these operations, as follows: [22]

1.The strategic process: this process determines how the principles of quality management are applied through the strategic process, that is why she seen that top management is responsible for creating an environment appropriate to quality and continuous improvement. It is necessary to ensure quality in the process and products to achieve project objective.

2.Resource-related processes: aim to plan and control resources. Examples of resources include computer software, hardware, facilities, finance, information, materials, personnel, services, and place.

3.Operations related to individuals: The quality and success of the project will depend on the individuals and the participants. These operations aim to create an environment in which individuals are able to contribute efficiently and effectively to the project. These processes are: establishing the organizational structure of the project, distributing individuals and developing the team.

4.Processes related to internal interaction: The project consists of a system of internal interaction processes, planned and work in one of these usually affects the other, the processes associated with internal interaction are the start of the project and the put of a project management plan, interaction management, change management, and the project completion process.

5. Field-related operations: The project scope includes a description of the project's product, its characteristics, and how it is measured or evaluated.

6.Time-related operations: These processes aim to determine dependencies and time of activities in order to ensure the completion of the project in a timely manner.

7. Cost-related processes: All project costs should be clearly defined (the cost of activities, indirect industrial costs, goods and services), the cost must be estimated through the appropriate sources of information and must be linked to project division structures, and the cost assessment, establishment, communication and documentation of the cost control system.

8. Communication-related operations: These operations aim to facilitate the exchange of necessary information for the project to ensure the generation, collection, publication, storage and final organization of project information and its generation in a timely and appropriate manner.

9. Risk related processes: It indicates the uncertainty and risks of the project that may occur during the completion of the project. The risk related processes are risk identification, risk assessment, risk treatment and risk control.

10. Procurement-related processes: These processes deal with obtaining products for the project, planning and controlling purchase, documenting procurement requirements, evaluating the supplier, subcontracting, and monitoring contracts, all of which are specific.

11. Operations related to measurement, analysis, and continuous improvement: This item provides guidelines for how the main organization and project organization must learn from projects. Both results should be used to measure and analyze data from project operations, apply corrective measures, preventive measures, and lost preventive methods to enable continuous improvement in current and future projects. The project organization must Decide which non-conformities should be recorded to monitor corrective actions.

The third section: 3- The practical aspect:

3-1- The reality of applying the international standard (ISO 10006: 2003), according to the responses of the sample members in the researched company:

This axis will be presented and analyzed results to personification the degree of application of activities for each axis of application using some descriptive statistics methods represented by the weighted mathematical media, and the percentage of application to determine the percentage of application of the research company to the activities of each axis with the international standard (ISO 10006: 2003), The size of the gap to determine the application of the paragraphed respondent to the international standard (ISO 10006: 2003).

3-1- The reality of management responsibility according to the International Standard (ISO 10006: 2003): It is noted from Table (1) that the weighted mean has reached (3,2) out of (6) degrees and

with application and documentation (53%) of the total paragraphs of the clause, which indicates that the company determines the requirements of customers and beneficiaries, but it does not meet all requirements as the company works to meet the requirements of the beneficiaries, a gap (47%) emerged as a result of the lack of involvement of the suppliers when setting the strategy and that information during the project is not used in continuous improvement, which indicates a low percentage of the company's application of this clause from the project quality management according to the international standard (ISO 10006: 2003).

Table (1) Checklist related to the application and documentation of the strategic process, management reviews and progress assessment of the management responsibility clause in accordance with International Standard (ISO 10006: 2003)

clause -5 - Management Responsibility (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -2.5- Strategic Process		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
The subsection of sub- clause 2.2.5- focus on the customer								
1	The project management undertakes a clear understanding of the requirements of customers and beneficiaries, ensuring a focus on all operations in the project to meet their needs					/		
The subsection of sub- clause 3.2.5- Leadership								
2	Do the top management determine a project leader to implement the quality culture in highlight of setting the quality policy, determine project objectives, creating infrastructures and resources,					/		

	providing organizational structure and decision-making based on real information, and strengthening and motivating project owners							
	The branch from sub-clause 4.2.5- employee participation							
3	Project workers are given authority and responsibility that enables them to participate in the project and the authority assigned to them is according to their responsibility	/						
	The branch from sub-clause 5.2.5- the approach to the process							
4	Take The project organization considers the following points: Determine appropriate project - processes Determine the project's inputs, - outputs and objectives Design future project operations in - the project life cycle - Determine the relationships and interactions Interlaced between processes	/						
5	The effectiveness and efficiency of the process is evaluated in the highlight of internal and external review					/		

The branch from sub-clause -6.5.5- The approach to the system for administration								
6	The project is dealt with As a set of decisions, linked and interrelated with decisions	/						
7	Do the Project operations clearly divide the responsibility and authority between the project organization and the beneficiaries				/			
The subsection of sub-clause 7.2.5- Continuous improvement								
8	There is a system for recording and analyzing the information obtained during the project for use in the process of continuous improvement				/			
9	Do the project organization is constantly researching to improve the efficiency and effectiveness of the operations that fall under its responsibility				/			
The subsection of sub-clause 8.2.5- The realistic entrance to decision-making								
10	It is recorded in the project Guide Information regarding project progress and performance	/						
11	There is an assessment of project progress and performance and an evaluation analysis of decision-making	/						

12	Do the project management analyzes information from previous project reports and uses it to support the improvement of current and future projects					/		
The subsection of sub-clause 9.2.5- Mutual benefit relations with the supplier								
13	The project organization works involve suppliers in identifying their strategies and determining their capabilities to achieve operations and product requirements							/
Sub-Clause 3.5- Management Reviews and Progress Assessment								
The subsection of sub-clause -1.3.5- Management review								
14	Do the project management reviews the project quality management system over its planned periods to ensure continuity of suitability, adequacy, efficiency and effectiveness					/		
Sub-section - 2.3.5 - Progress Assessment								
15	Project management uses progress evaluation results to provide information for continuous improvement in the efficiency and effectiveness of project management operations					/		

Weights	6	5	4	3	2	1	0
Repetition	4	1	0	2	7	0	1
Weighted mean	3.2						
Implementation percentage	53%						
gap size	47%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-2- The reality of resource management according to the international standard (ISO 10006: 2003)

3-2-1- The reality of the resource-related processes according to the International Standard (ISO 10006: 2003):

Table (2) shows the appearance of a gap of (34%) resulting from a weakness of concern in the resource determinants in terms of availability and safety, Which should be from the company take into consideration the availability of government resources and legislation to meet the needs and requirements of customers and beneficiaries, the value of the weighted mean reached (4) degrees out of (6) degrees, and the application and documentation ratio (66%) of the total paragraphs of the clause, which indicates the application of the research section for some paragraphs of the clause.

Table (2) Checklist related to the application and documentation of resource-related processes from resource management clause in accordance with International Standard (ISO 10006: 2003)

Clause -6- Resource Management (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub- Clause -6.1- Resource-related processes								
The subsection of sub- clause 6.1.2- Resource Planning								
1	Do the project organization determines what type and time of	/						

	request and how and where the resources needed for the project are obtained							
2	Project management is concerned with resource determinants in terms of availability, safety, cultural considerations, international agreements, trade unions, government legislation, financing, and the impact of the project on the environment					/		
The subsection of sub- clause 6.1.3- Resource control								
3	Do the project management Take action the Review to ensure that sufficient resources are available to achieve the project's objectives	/						
4	determine and analyze deviations from resource plans and coordinate review of resource requirements with other resource processes to update the remaining work plan					/		
Weights		6	5	4	3	2	1	0
Repetition		2	0	0	0	2	0	0
Weighted mean		4						
Implementation percentage		66%						
gap size		34%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-2-2- The reality of operations related to individuals according to the International Standard (ISO 10006: 2003): Table (3) shows that the researched company owns a weighted mean that has reached (3.3) out of (6) degrees, with application and documentation (55%) of the total paragraphs of the clause, the company does not make modifications to the organizational structure and does not allow employees to participate in the project planning process, therefore, a gap (45%) emerged because the company does not give importance to leadership skills when selecting the project manager, This indicates a decrease in the company's application rate for some paragraphs of the clause according to the international standard (ISO 10006: 2003).

Table (3) Checklist related to the application and documentation of operations related to individuals from the resource management clause according to the International Standard (ISO 10006: 2003)

Clause -6- Resource Management (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -6.2- Personnel related operations								
The subsection of sub- clause 6.2.2- Establish the organizational structure of the project								
1	The organizational structure of the project is established according to the organization's requirements and policies and project conditions	/						
2	The project organizational structure is designed to encourage efficient and effective communication and cooperation between all project participants							/

3	Planning to review the project's organizational structure and procedure it periodically to determine continuity of suitability and sufficiency					/		
The subsection of sub- clause 6.2.3- Distribution of individuals								
4	When choosing a project manager prioritize the Leadership Skills criterion					/		
5	Attention to the criterion of individuals skills, description, job role and competence, and reference from previous experience when selecting workers in the project	/						
6	The project manager determines who is responsible for establishing, implementing and maintaining the project quality management system					/		
7	To verify that the distributions are appropriate, there is an efficient and effective monitoring of workers' performance in their jobs	/						
The subsection of sub- clause 6.2.4- Team development								
8	Do the project management training employees In order to be percipient of the importance and relevance of project activities to achieving					/		

	quality objective							
9	The payoff is given to the qualified project team	/						
10	Do the project manager creates an environment for the project that promotes excellence, good working relationships, trust, respect and communication with all project participants		/					
11	Do the Participation of employees in the planning and implementation process with changes in the project or project organization							/
	Weights	6	5	4	3	2	1	0
	Repetition	4	1	0	0	4	0	2
	Weighted mean	3.3						
	Implementation percentage	55						
	gap size	45%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3- The reality of achieving the product according to the international standard (ISO 10006: 2003)

3-3-1- The reality of operations related to internal accreditation according to the International Standard (ISO 10006: 2003): Table (4) shows that the researched company has a weighted arithmetic mean that has reached (4.7) out of (6) degrees, with application and documentation (79%) of the total paragraphs of the clause, which indicates not using the previous projects and knowing the mistakes and challenges that you faced to benefit from them for the current and future projects and not working to determine the changes, a gap (21%) Appeared because the company does not take feedback from customers and beneficiaries.

Table (4) Checklist related to the application and documentation of processes related to the internal accreditation of the product realization clause according to the international standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and not Documented
Sub-clause -7.2 operations related to internal accreditation								
The subsection of sub- clause 7.2.2- Begin the project and put a project management plan		/						
1	A management plan is put that includes the project quality plan							
2	Details of previous projects are determined to take advantage of the experience gained to use when starting the project			/				
3	Do project management is reviewing contracts while put a project management plan to ensure that contract requirements are met	/						
The subsection of sub- clause 7.2.3- Interaction management								
4	Management of interaction includes the following: -Create procedures for managing the interaction - Holding job interaction meetings	/						

	<p>for the project</p> <p>-Measuring project performance using techniques such as adding value analysis</p> <p>-- Make progress estimates to evaluation the project status and planning the remaining work</p>							
The subsection of sub- clause 7.2.4- Change Management								
5	The agreement with the customer and other beneficiaries parties to the changes that affect the objectives of the project	/						
6	Project management is working quickly to identify the negative effects of changes				/			
7	Change management includes changes to the project management scope, goals, and plan	/						
The subsection of sub- clause 7.2.5- termination Project and process								
8	It is determined to closure the project and operations during the early stages of the project and is included in the project management plan	/						
9	Records are kept when the project is	/						

	closed							
10	It is a review of the performance of the project					/		
11	Feedback is taken from the customer and other beneficiaries							/
12	The preparation of appropriate reports based on the review at the closure of the project The project is formally delivered to the customer and the project receipt is delivered to the beneficiary parties	/						
Weights		6	5	4	3	2	1	0
Repetition		8	0	1	1	1	0	1
Weighted mean		4.7						
Implementation percentage		79%						
gap size		21%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-2- The reality of operations related to the scope according to the International Standard (ISO 10006: 2003): Table (5) shows the appearance of a gap of (27%) resulting from the failure to meet the customers' requirements for the product only, communicating the requirements to convert it into the activities that must be done, The value of the weighted mean reached (4,4) out of (6) degrees, with an application and documentation (73%) of the total paragraphs of the clause, this indicates weakness in the use of the results of the review and evaluation of activities to planning the remaining work of the activities, where the control is over the employees in light of work rotation more than the quality of work.

Table (5) Checklist related to the application and documentation of processes related to the scope of product realization clause according to the international standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.3- scope-related operations								
The subsection of sub- clause 7.3.2- determine of concept								
1	The needs and expectations of the customer and other beneficiaries are translated into activities that must be undertaken to achieve the project objective	/						
2	The customer's needs and expectations of the product and the processes stated and implied are translated into requirements			/				
The subsection of sub- clause 7.3.3- scope setting and control								
3	The characteristics of the project product are determined when setting the project scope and documenting them with measurable matters and using the features for design and development	/						
The subsection of sub- clause 7.3.4- determine activities								

4	The project structure is divided into activities to meet customer requirements with the participation of employees in determine these activities				/			
5	Each activity is determine in a way that its results are measurable	/						
The subsection of sub- clause 7.3.5- Control activities								
6	The action and control activities during the project according to the Project Management Plan	/						
7	There is a review and evaluation of activities, and the results of the review are used to assess the progress of the process outputs and to planning the remaining work						/	
Weights		6	5	4	3	2	1	0
Repetition		4	0	0	2	0	1	0
Weighted mean		4.4						
Implementation percentage		73%						
gap size		27%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-3- The reality of time-related operations according to the International Standard (ISO 10006: 2003): It is noted from Table (6) that the weighted mean has reached (4,2) out of (6) degrees with application and documentation (70%) of the total paragraphs of the clause, which indicates abbreviation of the adjustments or procedures on the project manager without giving authority to the

direct official for the work, therefore, a gap appeared (the size of 30%), resulting from weakness in risk assessment when estimating the time of the project and that many of the changes are not by engaging customers and beneficiaries, this indicates a decrease in the company's application rate for some paragraphs of the clause according to the international standard (ISO 10006: 2003).

Table (6) Checklist related to the application and documentation of time-related operations from the product realization clause according to the International Standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.4- Time-related operations								
The subsection of sub- clause 7.4.2- Planning the reliability of activities								
1	There is an identification and review of the internal interactions of activities in the project			/				
2	The benefit of the previous experiences is to draw the standard project work network during the put of the project plan	/						
The subsection of sub- clause 7.4.3- Estimate the time								
3	Estimation of time for activities is made by the individuals responsible for these activities, based on previous experience	/						
4	Do risk and uncertainty evaluation when estimating time for the project					/		

5	The customer and other beneficiaries are involved when setting the time estimate	/						
The subsection of sub- clause 7.4.4- Scheduling mode								
6	input data are identified and checked When setting scheduling	/						
7	Long-term activities are considered when determining the critical path, which is the longest path timing in the business network	/						
8	Are check for consistency relationships based activities to estimate time, rescanning all heterogeneous cases Before the close and release of the scheduler	/						
9	The customer and other beneficiaries are involved in scheduling when determining scheduling					/		
The subsection of sub- clause 7.4.5- Scheduling control								
10	Do the project organization reviews the project scheduling regularly to ensure adequate control of project activities			/				
11	Do the analysis of the project's progress in order to identify negative trends and inaccuracies in					/		

	the remaining work of the project and to identify and analyze variation from scheduling							
12	The root causes of variation are determine in scheduling, whether preferred or not preferred, and action is taken to ensure that non-preferred variation will not affect project objectives.	/						
13	It is determined to change the possible effects of scheduling on the budget and project resources and product quality				/			
14	The customer and other beneficiaries are notified of any proposed changes to scheduling and their involvement in decision-making							/
Weights		6	5	4	3	2	1	0
Repetition		7	0	2	1	3	0	1
Weighted mean		4.2						
Implementation percentage		70%						
gap size		30%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-4- The reality of the processes related to cost according to the International Standard (ISO 10006: 2003): Table (7) shows the appearance of a gap of (7%) resulting from a weakness budget for maintenance of the project quality management system, the value of

the weighted mean reached (5,6) degrees out of (6) degrees, with a percentage of application and documentation (93%) of the total paragraphs of the clause, which indicates the application of the research department to most of the paragraphs of the clause according to the international standard (ISO 10006: 2003).

Table (7) Checklist related to the application and documentation of operations related to the cost of clause product realization in accordance with International Standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.5- Cost related processes								
The subsection of sub- clause 7.5.2- Cost estimate								
1	All project costs are clearly determine Such as the costs of activities, the indirect industrial costs, and the costs of goods and services	/						
2	The cost estimate is based on previous experience these estimates achieve accuracy It can be applied to current project conditions	/						
3	There is an interest in budgeting for the establishment, implementation and maintenance of a project quality management system				/			
4	Project management when estimating costs takes into account current and expected trends in the	/						

	economic environment (such as inflation and taxes)							
The subsection of sub- clause 7.5.3- Budget								
5	Project budgeting is based on cost estimates and scheduling	/						
6	The project budget corresponds to the project objectives and any potential event (risk)	/						
7	The budget includes all costs allowed	/						
The subsection of sub- clause 7.5.4- Cost control								
8	DO the project organization regularly reviews project costs as specified in the project management plan, and that the project organization verifies the remaining budget coverage for the remaining work and identifies and analyzes any budget variation	/						
9	Project cost trends are analyzed using techniques such as the acquired value analysis technique	/						
10	Determine the root causes of budget variations, whether preferred or not preferred, and take action to ensure that non-preferred variations do not affect project objectives	/						

Weights	6	5	4	3	2	1	0
Repetition	9	0	0	0	1	0	0
Weighted mean	5.6						
Implementation percentage	93%						
gap size	7%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-5- The reality of the processes related to communication according to the International Standard (ISO 10006: 2003): It is noted from Table (8) that the weighted mean has reached (5.1) degrees out of (6) degrees, with a percentage of application and documentation (85%) of the total paragraphs of the clause, which indicates the application of the research department for most of the paragraphs, but a gap appeared in the size of (15%) is the result of the scarcity of information needed by the project and there are no procedures in which controls are specified for collection, which indicates a low percentage of the company's application of some paragraphs of the clause according to the international standard (ISO 10006: 2003).

able (8) Checklist related to the application and documentation of communication-related processes from the product realization clause according to the International Standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.6- Communication related operations								
The subsection of sub- clause 7.6.2- Communication planning								
1	The communication plan determine the information which will be officially communicated and the means used to transport it and repeat	/						

	the communication							
2	The communication plan determine planning for the form, language and structure of project documents and records in order to determine the information management system, who sends and receives information, documents control, records control and security procedures	/						
The subsection of sub- clause 7.6.3- information management								
3	The project organization determine the information you need and creates an information management system			/				
4	Perform procedures in which special controls are specified collect information, identify, classify, updating, distribution, storage, protection and retrieval		/					
5	Requires the project organization to provide adequate security of information and focus on confidentiality, abundance and integrity of information				/			
6	The project organization uses data, information and knowledge to set and achieve its objectives	/						
The subsection of sub- clause 7.6.4- Control of communications								

7	The planning and implementation of communications, also monitored and reviewed to ensure continued compatibility with the needs of the project	/						
Weights		6	5	4	3	2	1	0
Repetition		4	1	1	1	0	0	0
Weighted mean		5.1						
Implementation percentage		85%						
gap size		15%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-6- The reality of risk-related operations according to the international standard (ISO 10006: 2003): Table (9 shows) the appearance of the size of the gap (39%) due to the lack of risk management of the project and there are no documents specifying the risk that may be exposed to the project and the lack of studies to determine the potential risks of the project, there is only control over costs and what are the risks that face and leave other activities exposed to risks, the total value of the weighted mean (3.7) degrees out (6) degrees and by the application and documentation (61%) of the total paragraphs of clause which shows the application of the department to some paragraphs of the respondent on the clause in accordance with the international standard (ISO 10006: 2003).

Table (9) Checklist related to the application and documentation of risk related processes from the product realization clause according to the International Standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.7- Risk related processes								
The subsection of sub- clause 7.7.2- Risk identification								
1	Do the project organization identifies the risks at the beginning of the project using experience and historical data from the previous projects in the main organization					/		
2	The identification and registration of potential risks resulting from activity, process, and product interactions between the project organization, the main organization, and the beneficiaries					/		
3	Do the project organization identifies risks resulting from new technologies and developments					/		
4	An employee is designation It is authorized and responsible to manage these risks	/						
The subsection of sub- clause 7.7.3- Risk assessment								
5	Do the organization assesses all identified risks using quantitative and qualitative analysis		/					

6	Identified risk levels acceptable for the project and means	/						
7	The results of all analyzes and assessments are recorded and communicated to the relevant individuals	/						
The subsection of sub- clause 7.7.4- Risk treatment								
8	The solutions are to eliminate, mitigate, transfer, participate or accept risks	/						
9	The project organization verifies that proposing solutions to the specific risk has no undesirable effects or new risks arising from its implementation.					/		
The subsection of sub- clause 7.7.5- Risk control								
10	There is control over risks during project completion, after the process of identifying, assessing and treatment risks					/		
11	Individuals are encouraged to participate to identify risks, write reports to the project organization, and maintain risk management plans							/
12	Project risk reports are part of progress assessments	/						

Weights	6	5	4	3	2	1	0
Repetition	5	1	0	0	5	0	1
Weighted mean							
Implementation percentage							
gap size							

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-3-7- The reality of the processes associated with purchasing according to the International Standard (ISO 10006: 2003): Table (10) shows that the researched company possesses a weighted mean that has reached (5,4) degrees out of (6) degrees with application and documentation percentage (90%) of the total paragraphs of the clause, this indicates the application of the researched department to most of the paragraphs of the clause, but a gap of 10% appeared, because the company does not monitor the performance of the supplier and the suppliers are not evaluated by delivery and quality times, which indicates a lower rate of application of the department to this paragraph of the clause in accordance with the international standard (ISO 10006: 2003).

Table (10) Checklist related to the application and documentation of procurement-related processes from product verification clause according to International Standard (ISO 10006: 2003)

Clause -7- Product realization (ISO 10006: 2003)		Implemented and Documented	Implemented and Documented	Implemented and not Documented	Implemented and Documented	Implemented and Documented	Implemented and not Documented	and not Documented
Sub-clause -7.8- Procurement related operations								
The subsection of sub- clause 7.8.2- Purchase planning and control								
1	A purchase plan is prepared in which the scheduling of products is determined and the requirements of the product include characteristics,	/						

	time and cost							
2	Adequate time for activities to be performed in procurement-related operations is determined using prior experience of the suppliers' performance	/						
3	The project organization regularly reviews the progress of the purchase and compares it with the purchase plan	/						
The subsection of sub- clause 7.8.3- Documenting the purchase requirements								
4	Purchase documents specify the product, its characteristics, appropriate quality management system requirements, cost, and delivery dates for the product	/						
5	Purchase documents include customer requirements	/						
6	Review the purchasing documents before distribution to ensure that all requirements related to the product and other aspects have been fully identified	/						
The subsection of sub- clause 7.8.4- Supplier evaluation								
7	The suppliers of the project are evaluated from all aspects that affect the project, such as technical					/		

	expertise, production capability, delivery times and quality management							
8	Maintaining a record of accredited suppliers of the project organization	/						
The subsection of sub- clause 7.8.5- Contract								
9	The project organization shall contract with the suppliers of the project and ensure the delivery of the requirements of the quality management system, quality policy and quality objectives of the supplier	/						
10	Estimation of bids and identify all variations from the characteristics	/						
11	The evaluation of costs for the tender is not based only on the price of the suppliers, but also on the accompanying costs such as the cost of operation and maintenance, licensing fees, transportation, insurance, inspection, checking and variations treatment.	/						
12	Review the contract documents to ensure that they contain the results of any pre-contract negotiations with the provider	/						
The subsection of sub- clause 7.8.6-								

Contract control								
13	There is a system that ensures implementation that the terms of the contract include delivery dates and agreed-upon and documented clauses in the records that have been fulfilled	/						
14	The performance of the supplier is monitored to ensure compliance with the terms of the contract and by feedback the performance of the supplier is obtained					/		
15	Verification before termination of the contract that all terms of the contract have been fulfilled	/						
Weights		6	5	4	3	2	1	0
Repetition		12	1	0	0	2	0	0
Weighted mean		5.4						
Implementation percentage		90%						
gap size		10%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-4- The reality of measurement, analysis and improvement according to the international standard (ISO 10006: 2003): The table shows (11), the appearance of the size of the gap (31%) resulting from the company's poverty of modern technologies for improvement during the project there is weakness in the application of the project information management system so it does not necessary improvements, the value of the weighted mean reached (4,1) degrees out of (6) degrees, with a percentage of application and documentation (69%) of the total paragraphs of the clause, which

indicates the application of the research department for some paragraphs of the clause according to the international standard (ISO 10006: 2003).

Table (11) Checklist related to the application and documentation of processes related to improvement, measurement, analysis, and continuous improvement of the clause Measurement, Analysis, and Improvement according to the International Standard (ISO 10006: 2003)

clause -8- Measurement, Analysis and Improvement (ISO 10006: 2003)		Entirely implemented and Documented Entirely	and Documented Partially Implemented	Entirely implemented and not Documented	Partially Implemented and Documented Entirely	and Documented Partially implemented	and not Documented	Not implemented and not Documented
Sub-clause -8.1- Operations associated with improvement								
1	There are preventive and corrective measures in order to achieve continuous improvement in both current and future projects					/		
sub- clause 8.2 - Measurement and analysis								
2	Do the Project organization management records non-conforming cases	/						
3	DO the project organization analyzes project processes and products	/						
sub- clause 8.3 - continuous improvement								
The subsection of sub- clause 8.3.1 - Continuous improvement by the main organization								
4	The main organization designs an information management system for	/						

	its projects to identify, collect, store, update and retrieve information from the project							
5	The main organization maintains a list of all identified risks from its projects	/						
6	It takes information that needs to be learned from the projects from feedback from customers and other beneficiaries and also from other sources such as project charts, termination reports and complaints, audit results, data analysis, preventive and corrective actions, and project reviews					/		
7	The project organization verifies the credibility of the information before using it in the project					/		
8	The main organization performs project performance reviews before the project is close and the project management plan can be used as a structure or scope of work for the do and that the reviews include costumer and other beneficiaries	/						
The subsection of sub- clause 8.3.2 - Continuous improvement by the project organization								
9	The project organization designs the project information management					/		

	system to implement the specific requirements for learning from the project by the main organization							
10	The project organization ensures that the information you provide to the main organization is accurate and overall	/						
11	The project organization is implementing the necessary improvements by using the information related to the project and taken from the above-mentioned system that was created by the main organization					/		
Weights		6	5	4	3	2	1	0
Repetition		6	0	0	0	5	0	0
Weighted mean		4.1						
Implementation percentage		69%						
gap size		31%						

Source: - Researcher Prepare based on the clause of the international standard (ISO 10006: 2003).

3-5- The reality of project quality management according to the international standard (ISO 10006: 2003) in the researched company in total: Notes from the table (12) results on the level of the four main clauses of the project management quality according to international standard (ISO 10006: 2003) as the results were distributed between the highest level of application of the clause achieved by the seventh clause represented in the sub-clause (-7-5- operations related to cost), whereas, the weighted mean of has reached (5,6) degrees out of (6) degrees, with a percentage of application and documentation (93%) of the total paragraphs of the clause, this indicates the application of the researched company to most of the paragraphs of the clause, and the lowest level of application

achieved by the fifth clause is the responsibility of management, as the weighted arithmetic mean has reached (3.2) degrees out of (6) degrees and with an application and documentation ratio (53%) of the total paragraphs of the clause, this indicates the application of the researched company to some of the paragraphs, and the gap appeared with a size of (47%), while the other clauses appeared with an application rate ranging between (66%, 55%, 79%, 73%, 70%, 85%, 61%, 90%, 69%), Which indicates that there are paragraphs within the clause that were not applied, therefore the application percentages (100%) for the clauses did not appear, indicating the company's application of all four major clauses, but there are paragraphs within the clause that were not applied according to the international standard (ISO 10006: 2003).

Table (12) results of evaluation of the project quality management clauses according to the international standard (ISO 10006: 2003) in the company as a total

The four main clauses of project quality management according to the international standard (ISO 10006: 2003)		Fourteen sub-clauses of project quality management according to the international standard (ISO 10006: 2003)	average	The percentage of application	The size of the gap of the section
1	clause -5 - Management responsibility	Sub-clause 5.2-The Strategic Process	3.2	53%	47%
		Sub- clause 5.3- Management Review and Progress Assessment			
2	clause -6- Resource Management	Sub- clause 6-1- Resource Related Operations	4	66%	34%
		Sub- clause 6-2- Personnel related operations	3.3	55%	45%
3	clause -7- Product realization	Sub- clause 7-2- Operations related to internal accreditation	4.7	79%	21%
		Sub- clause 7.3- Operations related to scope	4.4	73%	27%

		Sub- clause -7-4- Operations related to time	4.2	70%	30%
		Sub- clause -7-5- Cost-related operations	5.6	93%	7%
		Sub- clause 7.6- Operations related to communication	5.1	85%	15%
		Sub- clause 7-7- Risk Related Operations	3.7	61%	39%
		Sub- clause 7-8- Procurement related operations	5.4	90%	10%
4	clause -8- Measurement, Analysis and Improvement	Sub- clause 8.1 Operations Related to Improvement	4.1	69%	31%
		Sub- clause 8-2- Measurement and Analysis			
		Sub- clause 8-3- Continuous Improvement			

The fourth section:4- Conclusions and recommendations

4-1- Conclusions: Results of checklists were produced the reality of the company search sites the following conclusions:

1. There is implementation and documentation for most of the four major clauses according to the International Standard (ISO 10006: 2003) and the fourteen sub- clauses of the standard.
2. The lack of implementation of all paragraphs of the fourteen sub- clauses of the International Standard (ISO 10006: 2003), and therefore there appeared to be weakness in the quality results in the projects.

3. The lack of interest by the company in the quality management of its projects and the failure to allocate part of the budget to improve the quality of its projects.
4. There is an overlap in the process of planning a project quality management system in the company between the project organization and the company without taking into account the actual reality and requirements of the system.
5. The company emphasizes the quality objects in its projects, except there is a lack of awareness among the employees of the company and the project organization, and the absence of criteria for evaluating the results, managing the quality of projects and achieving their object.
6. The company has the experience and skills that qualify them to implement the project quality management.
7. The lack of a database documenting previous projects unsuccessful design and development to avoid them in current and future projects.
8. The continuous improvement at the level of project quality management was not the required level because of the company's lack of concern in the benefits that can be achieved as a result of using continuous improvement of its project operations to achieve the level of project quality management.

4-2- Recommendations: According to the research conclusions, some recommendations appeared to benefit the company, as follows:

1. The necessity of applying and improving quality management in its projects according to the international standard (ISO 10006: 2003) in order to achieve the project the required quality.
2. The necessity of applying and documenting all the paragraphs of the fourteen sub-clauses of the International Standard (ISO 10006: 2003).
3. Include the project budget for the project quality management system according to the International Standard (ISO 10006: 2003) and do a continuous review of the budget.
4. The necessity of returning to the previous projects in order to benefit from the problems and challenges they faced and applying them to the current and future projects according to the international standard (ISO 10006: 2003).

5. Preparing the company to implement the project quality management system by increasing awareness and culture for employees through training programs specialized in quality culture, workshops and seminars.
6. Establishing a project quality management system according to the international standard (ISO 10006: 2003) and sending a committee from the project quality management system to the project organization to implement the paragraphs of the clauses of the international standard (ISO 10006: 2003).
7. Concern in monitoring training programs and then determine the variation and treatment and to continuously improve the training process.

References

A- Books & Article Internet & Thesis University Internet:

- 1- International Organization for Standardization (ISO).,(2003)" *quality management systems- Guidelines for quality management in projects* ": (2)nd ed .,publishing in Geneva-Switzerland, p.(1,2,3,4).
- 2- Drob, C., (2013)" *Overview About Project quality management* ", The Journal of Studies and Scientific Researches. Economics- "Vasile Alecsandri" University of Bacau, Vol. (20), No. (18),p.(232), pp.(231_236).
- 3- Heravitorbati, A., & Coffey, V., & Trigunarsyah, B.,(2011)" *Assessment of requirements for establishment of a framework to enhance implementation of quality practices in building projects*":International Journal of Innovation, Management and Technology, Vol.(2). No. (6), p.(467),pp.(465_470).
- 4- Ashokkumar, D., (2007)" *Study of Quality Management in Construction Industry*": International Journal of Innovative Research in Science, Vol. (3). No. (1), p.(36,38,39),pp.(36_43).
- 5- Laszlo, G., (2003)" *Pr Project Management: A Quality Manage- ment Approach* ": International Journal of TQM Magazine, Vol. (3). No. (3), p.(158),pp.(157_160).

- 6- Chase, R., & Jacobs, R., (2008)" *Operations and Supply Management ":*The Core, (1)st ed.,publishing Mc Graw – Hill/Irwin – new York, united states of America (U.S.A), p.(139).
- 7- Zafarani, A (2011)" *Project Quality Management Approaches: A Comparative Evaluation of International Standards"*, (2)nd ed., International Conference on Construction and Project Management (May 15), In IACSIT Press, Singapore, Bergische Universidad Wuppertal, p.(43).
- 8- Simona, D., & Eliza, D., & Badea, L., (2013)" *Project Quality Evaluation – An Essential Component of Project Success"*: International Journal of Project Management, Vol. (27). No. (3), p.(140),pp.(139_142).
- 9- Keng, T., & Hamzah, A., (2011)" *Study of Quality Management in Construction Projects"*: Chinese Business Review Journal of Retailing, , Vol. (10). No. (7), p.(543), pp. (542–552).
- 10- Isik, Z., & Arditi, D., & Dikmen, I., & Birgonul, T., (2009)" *Impact of corporate strengths/weaknesses on project management competencies"*: International Journal of Project Management, Vol. (27). No. (3), p.(73),pp.(629_637).
- 11- Heizer, J., & Render, B., (2008)" *operations management "*, (9)th ed.,Pearson prentice Hall – new Jersey, united states of America (U.S.A),p.(59).
- 12- Guerra, M., & Gimena, F., & Ezcurdia, P., & Silva, D., (2005)" *The Influence Of Monitoring And Control On Project Management Success"*, International Journal International Journal of Construction Project Management, Vol. (6). Nuo. (2), p.(172),P.P(163_184).
- 13- Rose, H., (2005)" *Project Quality Management: Why, What and How"*: J. Ross Publishing– new York, united states of America (U.S.A),p.(5,6,41,42,67,68).
- 14- Crnogorcic, Z., & Jegdic, A., & Miljanovic, M., & Gvozdenovic, T., (2008)" *Bodies Of Knowledge In Project Management And Project Quality Management"*: International Journal for Quality research, Vo. (2). No. (1), p.(73),pp.(69_76).
- 15- Zubact, D., & Lazarevic, D., & Sarkocecic, Z., & Mistic, M., & Stojcetovic, B., (2014)" *Managing Of Risks And Quality In Project "*, (8)th ed .,European International Quality Conference (May 23rd), In Center for Quality, Faculty of Engineering, University of Kragujevac, p.(55).

- 16- A Guide to the Project Management Body of Knowledge (PMBOK)., (2004)" *quality management systems-Guidelines for quality management in projects* ": (3)th ed .,publishing Project Management Institute, Newtown Square, p.(180).
- 17- Evans, J., & Lindsay, W., (2014)" *Managing For Quality & Performance Excellence*",(9)th ed.,publishing South–Western, Cengage Learning – new York, united states of America (U.S.A), p.(79).
- 18- Khanna, R., (2007)"*Production and Operations Management* ", (1)st ed.,publishing Asoke K. Ghosh–New Delhi, Indian, p.(75).
- 19- Dornbos, H., (2013)" *Integrating management System: A Comprehensive Approach For Amalgamating The Environmental & Project management Systems* " degree of Master, Florida International university, Stockholm - Sweden p.(16).
- 20- Nienaber, R., (2008)" *A Model For Enhancing Software Project management Using Software Agent Technology*" degree of Doctor, University Of South Africa, Miami-Florida p.(33,66,176).
- 21- Parra, M., (2005)" *Examinando los procesos de la Dirección de proyectos*": International Journal of IX Congreso de Ingeniería de Organización, Universidad de Antofagasta-Chile, Vol. (8). No. (9), p.(4).
- 22- Suárez, R., (2007)" *Metodología de Gestión de Proyectos en las Administraciones Públicas según ISO 10006*" degree of Doctor, University Of Oviedo, France, p.(76,77).