

Organizational Change Engineering: A Field Study of Executives' Attitudes toward Change Options and Pathways at Sonatrach's Skikda Natural Gas Liquefaction Complex

Dr. Assia Chikh¹, Dr. Amal Mekalfa²

¹Larbi Ben M'hidi University of Oum El Bouaghi, Faculty of Social Sciences and Humanities, Algeria.

E-mail: chikh.assia@univ-oeb.dz/ <https://orcid.org/0009-0001-9088-2953>

²University Kasdi Merbah of Ouargla, Faculty of Social Sciences and Humanities, Algeria.

E-mail: amal.mekalfa@univ-ourgla.dz/ <https://orcid.org/0009-0001-5026-5731>

Received: 20.02.2026

Accepted: 07.06.2026

Publishing: 24.08.2026

Abstract

The present study sought to investigate an important organizational variable, namely organizational change, by examining executives' attitudes toward organizational change through the following central question: **What are executives' attitudes toward organizational change?** The study also addressed two sub-questions: **What are executives' attitudes toward organizational change as content?** and **What are executives' attitudes toward organizational change as a process?** To answer these questions, a field study was conducted in accordance with the methodological procedures and tools adopted in field research. The Natural Gas Liquefaction Complex was selected as the field of study. The descriptive method was used, and the sample consisted of a stratified random sample representing 20% of the study population, with a total of 70 respondents. The questionnaire was used as the main data-collection instrument and was designed as a three-point Likert scale to measure attitudes. The data were processed using the Statistical Package for the Social Sciences (SPSS).

The study reached the following conclusions: executives' attitudes toward organizational change as content were positive, except with regard to the indicator concerning management's changing of employees' workplaces. Their attitudes were neutral toward the statement that the institution appreciates the efforts made by executives to ensure the success of change. Executives' attitudes toward organizational change as a process were also positive, except in relation to the coercive strategy dimension, most of whose indicators received neutral or negative responses.

Keywords: Organizational change; change engineering; content; process.

Introduction

Today's institutions do not operate in a rigid environment; rather, they are open systems operating in an environment characterized by dynamism and the rapid and intense pace of change. This has placed them in a state of uncertainty, as they interact with an open environment exposed to external transformations in various political, economic, social, and technological fields, among others. They also face internal transformations, particularly those

related to work systems and human-resource management, which have compelled institutions of different types and sizes to confront these challenges and pressures. Institutions that failed to keep pace with these changes faced extinction and disappearance.

Accordingly, change has become an inevitable requirement for institutions, whether they choose it or not, because it is necessary for adaptation. Change is no longer merely a reaction to external transformations affecting the institution; rather, it has become an approach followed by institutions through planned change. Organizational change refers to the transition of an institution from one organizational state to another, which is expected to be better than its predecessor and to respond to the aspirations of employees and external stakeholders.

This leads us to argue that systematic change proceeds in two directions: change in content, referring to the areas affected by change within the institution, whether in work methods and procedures, the technologies used, or human resources; and change as a process or plan with its own pathways and strategies, including participation, negotiation, and coercion strategies. Scholars have adopted these strategies because they seek to make the changes introduced by the institution acceptable to its employees. Many researchers have emphasized the importance of these two aspects because they are interconnected and cannot be separated, including Philippe Bernoux in his book *The Sociology of Change in Institutions and Organizations* (2004).

Institutions generally do not attach sufficient importance to the process dimension. Instead, they focus more on the content of change than on the methods used to implement it. This is often attributable to the management and administrative style that institutional officials are accustomed to following. They act on the assumption that preparing a sound change program is sufficient to move the institution from an undesirable situation to another situation, without giving adequate attention to the methodology of change.

This has raised several issues for those responsible for managing change. Researchers have attempted to provide solutions to these issues by focusing on the scientific dimension of change. Among them is John Kotter, who proposed an eight-step model that successful institutions continue to adopt in leading change.

Therefore, genuine and effective change can only be achieved through the participation of all individuals at different organizational levels, even if only partially, in the change process. This is intended to reduce the risks arising from differences in viewpoints and employees' reactions to the process, which may be either positive or negative.

Accordingly, attitudes, understood as viewpoints, behaviors, and responses to specific stimuli-including situations, events, individuals, and issues-constitute a tool for measuring executives' attitudes toward organizational change and determining the extent to which they accept or reject existing or future change projects. By studying executives' attitudes, it is possible to predict the extent of their acceptance of and integration into change projects.

Executives were selected as a central professional category because some of them may be members of the change leadership team. The present study was conducted to measure executives' attitudes toward organizational change at the GL1K Natural Gas Liquefaction Complex, as a model of an Algerian institution that is considered a vital component of the

national economy and has undergone numerous changes and developments in various fields, particularly following the explosion that occurred there in 2004.

The study seeks to investigate the attitudes of its executives by answering the central research question:

- What are executives' attitudes toward organizational change?

To answer this question, it was divided into the following sub-questions:

- What are executives' attitudes toward organizational change as content?
- What are executives' attitudes toward organizational change as a process?

Significance of the Study

This study was conducted in an institution of significant economic, political, and social importance at the local, regional, and global levels, namely the Skikda Natural Gas Liquefaction Complex. Any change within this institution contributes to its success and its ability to survive with efficiency and effectiveness, particularly because it operates in a vital sector characterized by intense competition.

This study represents an attempt to understand the change that occurred at the complex following the explosion of 2004. This event resulted in a series of changes affecting various aspects of the institution and provoked different reactions among the various professional categories.

Understanding executives' attitudes toward organizational change is highly important for the success of the change process. Executives assist decision makers because, on the one hand, they may be members of the change leadership team, thereby providing insight into this group's vision and perception of change. On the other hand, they may occupy the other side as implementers of change. Understanding their attitudes helps measure the extent to which executives accept change, given that they possess sufficient information about the content and process of organizational change.

Objectives of the Study

The study aims to:

- Identify the attitudes of executives at the Natural Gas Liquefaction Complex toward organizational change as content.
- Identify the attitudes of executives at the Natural Gas Liquefaction Complex toward organizational change as a process.
- Identify the strategies used by management to support change.

Theoretical Framework of Organizational Change

A. Linguistic Definition

• **Change:** The term is derived from the Arabic verb *ghayyara*, meaning to transform or replace something, as if making it different from what it previously was. The expression "things have changed" means that they have become different, while "he changed the matter" means that he transformed it (Abu al-Fadl Jamal Ibn Manzur, 1992, p. 3325).

• **Organization:** The term is derived from the verb *nazama*, meaning to arrange or combine one thing with another. The expression “he organized the pearls” means that he collected and arranged them systematically (Al-Fayruzabadi, Majd al-Din Yaqub, 1987, p. 346).

B. Terminological Definition

• Organizational change is defined as a studied and planned process carried out over a long period. It generally concerns plans and policies, the organizational structure, organizational behavior, organizational culture, performance technology, work procedures and conditions, and other areas, with the aim of achieving compatibility and adaptation to changes in the internal and external environment in order to ensure survival, continuity, development, and excellence (Jamal Mohammed Abdullah, 2010, p. 57).

• Ahmed Maher defines organizational change as the introduction of modifications to management objectives and policies, or to any element of organizational work and its activities, in response to changes in the surrounding environment. It also involves creating new organizational conditions, administrative methods, and activities that enable the organization to outperform other organizations (Ahmed Maher, 2002, p. 432).

• Organizational change is also defined as a long-term effort to improve an organization’s ability to solve problems and renew its processes. This is achieved through comprehensive development of the prevailing organizational climate, with particular emphasis on increasing the effectiveness of work groups. It is a directed, intentional, purposeful, and conscious change that seeks to achieve environmental adaptation and ensure the transition to an organizational state with a greater capacity for problem solving (Mahmoud Salman Al-Omian, 2005, p. 343).

• Mohammed Hassan Ahmed views organizational change as the process of introducing, improving, or developing an organization so that it becomes different from its current state and is able to achieve its objectives more effectively. Change may concern the organization’s structure, policies, programs, procedures, or behavioral aspects. It may also affect the organization as a whole or only some of its components, and may occur rapidly or gradually (Mohammed Hassan Ahmed, 2007, p. 124).

• Organizational change is also considered a relatively permanent modification in one of the institution’s subsystems, provided that this change is observable by members of the organization and by all those connected with it (Pierre Collerette et al., 1979, p. 20).

• Alter Norbert defines organizational change as a process, that is, a continuous sequence of actions aimed at dismantling established organizational frameworks and constructing new ones. This process permeates human relationships, within which interactions among the various actors structure and guide the actions leading to change (Alter Norbert, 2000, p. 128).

Operational Definition of Organizational Change

Based on the foregoing, organizational change can be operationally defined as a conscious collective effort and a planned process characterized by relative continuity. It aims to move the organization from its current situation to another situation believed to be more appropriate for the needs of the organization, its members, and the environment in which it

operates. This change may encompass the organization as a whole or may affect one of its organizational aspects.

First: Scope of the Study

Defining the scope of a study is one of the most important methodological steps in social research. Many researchers and specialists in social research methods agree that every study has three main areas of scope:

1. Geographical Scope

The geographical scope refers to the field in which the research is conducted. The GL1K Natural Gas Liquefaction Complex in Skikda was selected as the geographical setting for studying executives' attitudes toward organizational change. Accordingly, a presentation of this complex, which represents the beating heart of the city of Skikda, is provided below.

Description of the Complex

The GL1K Gas Liquefaction Complex is located in the industrial zone of Skikda, approximately 3 km from the provincial headquarters, specifically in the Larbi Ben M'Hidi area in the southeastern part of Skikda. It covers an area of 92 hectares. The project took three years to establish, from 1965 to 1968, and the complex entered the production phase in 1972.

In addition to exporting gas abroad, the complex supplies the ENIP petrochemical complex with methane for the production of methylene and its derivatives.

The complex specializes in the liquefaction of natural gas. The purpose of this process is to facilitate the transportation of large quantities of gas in liquid form to importing countries.

Liquefied natural gas requires specific physical conditions for its conversion, including a temperature of approximately -165°C and an atmospheric pressure of 600 units of atmospheric pressure in the gaseous state.

Natural gas is transported by ships following the liquefaction process. This is where the role of the Natural Gas Liquefaction Complex becomes evident. The gas is transported through a 580-km pipeline passing through Biskra, Batna, and Constantine. The complex is considered one of the most important industrial facilities in Skikda. It extends 35 km eastward and is located 700 m east of Oued Safsaf. It is bordered to the north by the Mediterranean Sea, covers an area of approximately 90 hectares, and is located 3 km from the city of Skikda.

The complex is one of the most important plants in the industrial zone and employs approximately 2,000 workers.

2. Human Scope

The human scope comprises all employees working at the GL1K Natural Gas Liquefaction Complex of Sonatrach in Skikda, whether or not they are directly related to the subject of the study. According to the statistics provided to us, the complex employs 1,500 workers, including executives, supervisory employees, and operational workers, distributed among 15 departments:

- Internal Security Department.
- Technical Department.
- New Projects Department.

- Industrial Safety and Prevention Department.
- Finance Department.
- Management Information Systems Department.
- Procurement and Contracts Department.
- Deputy Production Directorate.
- Human Resources Deputy Directorate.
- Production Department.
- Maintenance Department.
- Supply Department.
- Human Resources Department.
- Social Services Department.
- General Services Department.

The executive category was selected as the human scope of the study because of the nature of the research topic, namely, “Executives’ Attitudes toward Organizational Change.” The number of executives was estimated at 348, including engineer executives, university-qualified executives, and promoted executives. The following table shows the distribution of executives across the complex’s departments.

Table 1: Distribution of Executives across the Complex’s Department

No.	Department	Number of executives
1	Internal Security	1
2	Technical Department	56
3	New Projects	18
4	Industrial Safety and Prevention	24
5	Finance	23
6	Management Information Systems	13
7	Procurement and Contracts	6
8	Deputy Production Directorate	12
9	Production	62
10	Maintenance	83
11	Supply	15
12	Human Resources Deputy Directorate	5
13	Human Resources	10
14	Social Services	9
15	General Services	11
	Total	348

3. Temporal Scope

This study was conducted from janury 2025 to april 2025.

Second: Research Methodology

The present study falls within the field of descriptive studies. Therefore, the descriptive method was used because it is considered the most appropriate method, given that its procedures are consistent with the objectives of the study.

Field Research Techniques

The present study relied on a number of research instruments for the purposes of data collection and analysis. These instruments consisted of a set of technical tools and procedures considered most appropriate for achieving the objectives of the study. Since the study focused on identifying executives' attitudes toward organizational change, the questionnaire was adopted as the primary research instrument.

Questionnaire

The questionnaire was designed as the main measurement instrument in the form of an attitude scale, specifically a three-point Likert scale, due to its suitability for measuring attitudes and the ease of processing its data using the Statistical Package for the Social Sciences (SPSS).

The questionnaire was initially submitted for face-validity assessment to professors in the Department of Sociology at the University of August 20, 1955, Skikda. After revision, it was pilot-tested with 10 executives, and the statements were simplified to make them understandable to members of the various professional categories.

Revised Statements

Statement 1: The use of information technology reduces bureaucracy at work.

Revised version: Information technology helps reduce the amount of paper used at work.

Statement 2: The training provided is consistent with the requirements of the new work environment.

Revised version: Management schedules training courses that are consistent with the requirements of the new work environment.

Statement 3: The more the change program is enriched with your ideas, the more acceptable it becomes.

Revised version: The change program is enriched with your ideas.

The questionnaire consisted of 31 items distributed across three axes, as follows:

- **Axis 1:** Characteristics of the study population, comprising items 1–6.
- **Axis 2:** Respondents' attitudes toward change as content, comprising 14 items, from item 7 to item 20.
- **Axis 3:** Respondents' attitudes toward change as a process, comprising 11 items, from item 21 to item 31.

After the final administration of the questionnaire and before undertaking any statistical processing, Cronbach's alpha coefficient was calculated to measure the internal consistency of the questionnaire. The results were as follows:

Table 2: Cronbach's Alpha Coefficient

Axis	Cronbach's alpha
Axis 2: Items 7–20	0.8032
Axis 3: Items 21–31	0.7733
Total of the two axes	0.8576

These results demonstrate the high validity and reliability of the data-collection instrument.

Sample and Sampling Procedure

Given the large number of executives, which amounted to 348, a stratified random sample of 70 executives was selected. The sample represented 20% of the total number of executives at the Natural Gas Liquefaction Complex. The sample size was calculated as follows:

$$348 \times 20100 = 69.6 \approx 70 \quad 348 \times \frac{20}{100} = 69.6 \approx 70 \quad 348 \times 10020 = 69.6 \approx 70$$

Accordingly, the selected sample consisted of 70 executives from the Natural Gas Liquefaction Complex at Sonatrach.

The present study focused exclusively on the executive category at the complex because organizational change, as a policy, requires a strategic plan and highly qualified personnel. This led us to focus on this category because it is considered the group most capable of understanding, perceiving, and implementing the content of change within the complex, which is undergoing a technological change experience.

Furthermore, this category is close to decision-making centers on the one hand and to implementation centers on the other.

Accordingly, the study population was not homogeneous, and the selected sample was stratified randomly according to the professional categories to which the executives belonged. The categories were distributed as follows:

1. Engineer executives.
2. University-qualified executives.
3. Promoted executives.

The number of individuals in each stratum was calculated as follows:

1. Engineer Executives

$$168 \times 20100 = 33.6 \approx 34 \quad 168 \times \frac{20}{100} = 33.6 \approx 34 \quad 168 \times 10020 = 33.6 \approx 34$$

2. University-Qualified Executives

$$130 \times 20100 = 26130 \times \frac{20}{100} = 26130 \times 10020 = 26$$

3. Promoted Executives

$$50 \times 20100 = 1050 \times \frac{20}{100} = 1050 \times 10020 = 10$$

Thus, the total stratified sample consisted of 70 executives.

Statistical Data-Processing Tools

The statistical data were processed using the Statistical Package for the Social Sciences (SPSS), according to the following procedures:

- After collecting the questionnaires, codes were assigned to the variables corresponding to each statement in the questionnaire. Values were also assigned to the response options: 3 for “agree,” 2 for “neutral,” and 1 for “disagree.”
- The questionnaire data were entered according to the aforementioned coding system for the 70 members of the study sample.
- The statistical techniques to be used were selected. These included descriptive statistical methods, namely frequencies, percentages, arithmetic means, and standard deviations. Cronbach’s alpha coefficient and Spearman’s correlation coefficient were also used.

Statement	Agree n	Agree %	Neutral n	Neutral %	Disagree n	Disagree %	Total	Mean	M	Str
You perform your work in different ways.	58	82.9	1	1.4	11	15.7	70	2.67	7	0.74
New work procedures have been introduced.	62	88.6	6	8.6	2	2.9	70	2.85	4	0.43
Management assigns you new tasks and responsibilities.	42	60.0	16	22.9	12	17.1	70	2.42	10	0.77
Management changes employees' workplaces.	27	38.6	21	30.0	22	31.4	70	2.07	13	0.84
Management increases working hours.	13	18.6	13	18.6	44	62.9	70	1.55	14	0.79
Management provides new technological means.	67	95.7	1	1.4	2	2.9	70	2.92	1	0.35
The technological means used reduce the effort required.	54	77.1	1	1.4	15	21.4	70	2.55	9	0.83
The technological means used ensure the rapid completion of tasks.	64	91.4	0	0.0	6	8.6	70	2.82	5	0.56
Information technology helps reduce the amount of	66	94.3	1	1.4	3	4.3	70	2.90	2	0.42

paper used at work.										
Management is committed to identifying training needs.	57	81.5	3	4.3	10	14.3	70	2.67	7	0.72
Management schedules training courses consistent with the requirements of the new work environment.	65	92.9	1	1.4	4	5.7	70	2.87	3	0.48
You receive training courses consistent with the requirements of your work.	63	90.0	2	2.9	5	7.1	70	2.82	5	0.54
The institution appreciates the efforts made by executives to ensure the success of change.	40	57.1	12	17.1	18	25.7	70	2.12	12	0.86
Tasks are distributed according to the competencies possessed by executives.	47	67.1	6	8.6	17	24.3	70	2.42	10	0.86

• Cronbach's alpha coefficient was calculated for each axis to measure the internal consistency of each axis. Cronbach's alpha was then calculated for the questionnaire as a whole to measure its internal consistency, that is, the strength of the relationship between each axis and the total questionnaire scores. This coefficient provides evidence of the validity of the measurement instrument and confirms that it performs the function for which it was designed, namely measuring the characteristics it is intended to measure. It also provides evidence of the instrument's suitability for the purpose for which it was used.

- Frequencies and percentages were calculated for all members of the study sample.

Tabulation, Analysis, and Interpretation of the Field Study Results

Respondents' Attitudes toward Change as Content

1. Respondents' Attitudes toward Organizational Change as Content

Table 3: Respondents' Attitudes toward Organizational Change as Content

Interpretation of Table 3

The arithmetic mean is one of the measures of central tendency. It was used to describe the sample as a whole through a single value representing the average responses to the various questionnaire statements and replacing the large number of individual values in the dataset. It also indicates the degree of agreement. The closer the arithmetic mean is to 3, the higher the degree of agreement; conversely, the closer it is to 1, the lower the degree of agreement. The categories used to determine the degree of agreement are presented in the table of means and standard deviations.

Table 3 shows that the respondents' degree of agreement with the "change as content" axis was generally high across the statements. These statements covered various areas affected by change, including work procedures, changes in technological means, and human-resource management. The attitudes of the executives at the Natural Gas Liquefaction Complex were ranked according to their level of importance as follows:

- The respondents expressed positive attitudes toward the statement "Management provides new technological means," with an agreement rate of 95.7%, a mean of 2.92, and a low degree of dispersion, as indicated by the standard deviation of 0.35. This demonstrates that the executives' attitudes were concentrated around agreement. This result may be attributed to the fact that the positions they occupy require the availability of modern technological means.

- The respondents expressed positive attitudes toward the statement "Information technology helps reduce the amount of paper used at work." The agreement rate was high at 94.3%, with a mean of 2.90 and a low degree of dispersion, reflected in a standard deviation of 0.42.

- The statement "The technological means used ensure the rapid completion of tasks" also recorded a high level of agreement, reflecting positive attitudes among the respondents. The agreement rate reached 91.4%, with a mean of 2.82 and a low degree of dispersion of 0.56. This result is supported by the interviews conducted with the executives, during which the respondents expressed their acceptance of and support for changes affecting the technological dimension because of their role in facilitating the completion of tasks.

- The respondents' attitudes toward "Management schedules training courses consistent with the requirements of the new work environment" were positive, with an agreement rate of 92.9%, a mean of 2.87, and a standard deviation of 0.48. This may be attributed to management's commitment to providing executives with continuous training.

- The statement "Executives receive training courses consistent with the requirements of their work" recorded a high agreement rate of 90.0%, with a mean of 2.82 and a standard deviation of 0.54.

- The executives indicated that “their institution has introduced new work procedures.” The agreement rate for this statement reached 88.6%, with a mean of 2.85 and a relatively low standard deviation of 0.43.

- The respondents also expressed a high level of agreement with the statement “You perform your work in different ways.” The agreement rate reached 82.9%, with a mean of 2.67 and a standard deviation of 0.74, indicating considerable variation in the respondents’ attitudes. This result was also confirmed through the interviews, during which the respondents expressed their dissatisfaction with routine work and their desire for renewal and innovation.

- The executives at the Natural Gas Liquefaction Complex expressed their views on the statement that “The technological means used reduce the effort required,” with an agreement rate of 77.1%, a mean of 2.55, and considerable variation in their attitudes, as indicated by a standard deviation of 0.83.

- The respondents’ attitudes toward the statement “Tasks are distributed according to the competencies possessed by executives” were positive, with an agreement rate of 67.1%, a mean of 2.42, and considerable variation in the responses, reflected in a standard deviation of 0.86.

- The respondents expressed positive attitudes toward “Being assigned new tasks and responsibilities,” with an agreement rate of 60.0%, a mean of 2.42, and considerable variation in their responses, reflected in a standard deviation of 0.77.

- The statement “The institution appreciates the efforts made by executives to ensure the success of change” received agreement from the respondents, reflecting generally positive attitudes. The agreement rate was 57.1%, with a mean of 2.12 and considerable variation in the respondents’ attitudes, as indicated by a standard deviation of 0.86. This was also observed during the interviews, in which the respondents confirmed that management encourages them to contribute to the success of the changes it introduces.

- The respondents’ attitudes toward the statement “Management changes employees’ workplaces” were positive but reflected a low level of agreement. The agreement rate reached 38.6%, with a mean of 2.07 and considerable variation in the respondents’ opinions, reflected in a standard deviation of 0.84. This may be attributed to the respondents’ preference for stability in their workplaces and their reluctance to change them.

- The statement “Management increases working hours” recorded disagreement among the respondents, with a disagreement rate of 62.9%, a mean of 1.55, and considerable variation in their opinions, reflected in a standard deviation of 0.79. This was the only statement that received a predominantly negative response, which may be explained by the fact that increased working hours represent an additional burden for the respondents.

Result of the Sub-Question Related to Change as Content

- The respondents expressed agreement with the content of change, except in the dimension of work methods and procedures. In this dimension, they expressed a neutral response regarding the indicator stating that management changes employees’ workplaces. The indicator stating that management increases working hours received a negative response.

- With regard to the human-resource management dimension, the respondents expressed a high level of agreement with all its items, except for the indicator stating that the institution

appreciates the efforts made by executives to ensure the success of change, for which the response was neutral.

- With regard to the technology dimension, the respondents expressed a high level of agreement with all its items.

Respondents' Attitudes toward Change as a Process

2. Respondents' Attitudes toward Organizational Change as a Process

Table 4: Respondents' Attitudes toward Organizational Change as a Process

Statement	Agree n	Agree %	Neutral	% Neutral	Disagree	% Disagree	Total	Mean	Mean	Standard deviation
Management keeps you informed about new developments.	56	80.0	5	7.1	9	12.9	70	2.67	2	0.70
You are involved in the change process from its beginning.	51	72.9	8	11.4	11	15.7	70	2.57	5	0.75
The leader discusses work-related problems collectively.	53	75.7	9	12.9	8	11.4	70	2.64	3	0.68
Those responsible for change make sure to communicate with you.	46	65.7	14	20.0	10	14.3	70	2.51	7	0.74
The change program is enriched with your ideas.	46	65.7	15	21.4	9	12.9	70	2.52	6	0.72
Management motivates executives to adopt change.	58	82.9	6	8.6	6	8.6	70	2.74	1	0.61
Management attempts to reach a compromise with executives in order to gain their acceptance of change.	39	55.7	22	31.4	9	12.9	70	2.42	8	0.71
Management discusses the problems faced by executives as a result of change.	53	75.7	9	12.9	8	11.4	70	2.64	3	0.68
Management uses force during the change process.	6	8.6	5	7.1	59	84.3	70	1.15	11	0.60

Management is responsible for approving the change process.	33	47.1	12	17.1	25	35.7	70	2.11	9	0.91
In the event of resistance to change, management resorts to disciplinary measures.	16	22.9	13	18.6	41	58.6	70	1.69	10	0.83

It is evident from Table 4 that the respondents' degree of agreement with the "change as a process" axis was generally high. The statements covered the three strategies adopted by management to secure executives' acceptance of change: the participation strategy, the negotiation strategy, and the coercion and force strategy. The attitudes of the executives at the Natural Gas Liquefaction Complex were ranked according to their level of importance as follows:

- The strategy that received the highest level of agreement was the **negotiation strategy**, with an agreement rate of 82.9%, a mean of 2.74, and a standard deviation of 0.61. This was also confirmed by the interviews conducted with the executives, during which they stated that management motivates them to adopt change and keep pace with new developments.

- Management also adopted the strategy of involving employees. The statement "Management keeps you informed about new developments" recorded a high agreement rate of 80.0%, with a mean of 2.67 and a standard deviation of 0.70, indicating considerable variation in the respondents' attitudes around the arithmetic mean.

- The respondents expressed positive attitudes toward the statement "The leader discusses work-related problems collectively," with an agreement rate of 75.7%, a mean of 2.64, and a standard deviation of 0.68, indicating considerable variation in the respondents' attitudes.

- The statement "Management discusses the problems faced by employees as a result of change" recorded an agreement rate of 75.7%, reflecting positive attitudes among the respondents. It had a mean of 2.64 and a standard deviation of 0.68, indicating considerable variation in the respondents' attitudes.

- The respondents' attitudes toward the statement "You are involved in the change process from its beginning" were positive, with an agreement rate of 72.9%, a mean of 2.57, and a standard deviation of 0.75.

- The respondents' attitudes toward the statement "The change program is enriched with your ideas" were positive, with an agreement rate of 65.7%, a mean of 2.52, and a standard deviation of 0.72.

- The statement "Those responsible for change make sure to communicate with you" also recorded a high level of agreement, reflecting the respondents' positive attitudes. The agreement rate was 65.7%, with a mean of 2.52 and a standard deviation of 0.74.

- The respondents expressed positive attitudes toward the statement "Management attempts to reach a compromise with employees in order to gain their acceptance of change," with an agreement rate of 55.7%, a mean of 2.42, and a standard deviation of 0.71, indicating

considerable variation in their attitudes. The high levels of agreement with the preceding statements confirm that management employs two strategies to implement change: the **motivation strategy** and the **participation strategy**, both of which received considerable acceptance from the respondents.

- The respondents' attitudes toward the statement "Management is responsible for approving the change process" were positive, although the agreement rate was only 47.1%. The item recorded a mean of 2.11 and a standard deviation of 0.91, indicating considerable variation in the respondents' opinions. This confirms that the change process is implemented through participation.

- The strategy that received the lowest level of agreement was the **force and coercion strategy**, as reflected in the statement "In the event of resistance to change, management resorts to disciplinary measures." The respondents disagreed with this strategy at a rate of 58.6%. This represents a moderate response, with a mean of 1.69 and a standard deviation of 0.83, indicating considerable variation in their opinions.

- The statement "Management uses force during the change process" also received disagreement from the respondents, with a disagreement rate of 84.3%, a mean of 1.15, and a standard deviation of 0.60, indicating variation in the respondents' attitudes.

Result of the Sub-Question Related to Change as a Process

- The respondents expressed a high level of agreement with all the items in the second axis concerning the negotiation and participation strategies. However, the force strategy recorded two negative responses: the use of force by management during the change process and management's resorting to disciplinary measures in cases of resistance to change.

Conclusion

Through this study, we sought to investigate executives' attitudes toward an important variable in the sociological field, namely organizational change. The study addressed the various theoretical frameworks related to the topic, as well as a set of methodological procedures consistent with its objectives, in an attempt to identify executives' attitudes toward organizational change.

To achieve this objective, the study variable was examined in practice within Sonatrach, particularly at the GL1K Natural Gas Liquefaction Complex. The study produced several findings, the most important of which are:

- Executives' attitudes toward organizational change as content were positive, except with regard to the indicator stating that management changes employees' workplaces. Their attitudes were neutral toward the statement that the institution appreciates the efforts made by executives to ensure the success of change.

- Executives' attitudes toward organizational change as a process were positive, except in relation to the coercion strategy dimension, most of whose indicators received neutral or negative responses.

References

- Abu al-Fadl Jamal Ibn Manzur. (1992). *Lisan al-Arab*. Dar Sadir, Beirut, Lebanon.
- Al-Fayruzabadi, Majd al-Din Yaqub. (1987). *Al-Qamus al-Muhit* (2nd ed.). Al-Risalah Foundation, Beirut, Lebanon.
- Maher, Ahmed. (2002). *Organizational Behavior: An Introduction to Skills Development* (8th ed.). University House, Alexandria, Egypt.
- Abdullah, Jamal Mohammed. (2010). *Change Management and Organizational Development* (1st ed.). Dar Al-Mu'taz for Publishing and Distribution, Amman, Jordan.
- Al-Omian, Mahmoud Salman. (2005). *Organizational Behavior in Business Organizations* (3rd ed.). Dar Wael for Publishing and Distribution, Jordan.
- Ahmed, Mohammed Hassan. (2007). *Planning and Organization Management* (1st ed.). Dar Kunuz Al-Ma'rifah, Jordan.
- Alter, Norbert. (2000). *L'Innovation ordinaire*. Presses Universitaires de France, Paris, France.
- Colerette, Pierre, Delisle, Gilles, & Perron, Richard. (1979). *Le changement organisationnel: Théories et pratiques*. Presses de l'Université du Québec, Canada.