

T.C.
İSTANBUL KÜLTÜR UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

**ANALYZING THE IMPACT OF OCCUPATIONAL HEALTH
AND SAFETY ON TOTAL QUALITY MANAGEMENT: A CASE
STUDY IN JORDAN**

MASTER OF SCIENCE THESIS

Nezar RABABAH

2000006829

Department: Industrial Engineering

Program: Engineering Management

Supervisor: Prof. Ayşe Tülin AKTİN

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Nezar Rababah

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ÖZET

İş Sağlığı ve Güvenliğinin Toplam Kalite Yönetimi Üzerindeki Etkisinin Analizi:

Ürdün'de Bir Vaka Çalışması

Nezar Rababah

Bu çalışma, toplam kaliteye ulaşmada iş sağlığı ve güvenliğinin etkisini ortaya koymayı amaçlamaktadır. Araştırmacı, çalışmanın amaçlarına ulaşmak için bir ölçek geliştirmiş ve bunu Ürdün'de madencilik sektöründe yer alan şirketlerde çalışan bir grup işçiye uygulamıştır. Tanımlayıcı analitik yaklaşım, 400 adetlik bir örneklem üzerinde gerçekleştirilmiştir.

Çalışmanın sonuçları, Ürdün'de faaliyet gösteren şirketlerde iş sağlığı ve güvenliğinin ürünlerin toplam kalitesi ve şirketlerin başarıları üzerinde açık bir etkisinin olduğunu ve çalışanların sonuçlarında farklılık olmamasının, cinsiyet değişkenine atfedildiğini göstermiştir. Toplam kalitenin, iş sağlığı ve güvenliği ile yakından ilişkili olduğu, çalışmanın sonuçları ve sınıflandırmaları ile ortaya konmuştur.

Çalışmada sunulan önerilerin başında, kapsamlı kalite standartlarının mevcut olduğu kurum, şirket ve fabrikalarda, en yüksek standartlara ulaşmak için iş sağlığı ve güvenliği standartlarının benimsenmesinin gerekliliği gelmektedir.

Anahtar Kelimeler: İş Sağlığı ve Güvenliği, Kapsamlı Kalite.

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Institute	: Institute of Graduate Studies
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ABSTRACT

Analyzing the Impact of Occupational Health and Safety on Total Quality Management: A Case Study in Jordan

Nezar Rababah

The purpose of this study is to shed light on the importance of workplace health and safety in achieving overall quality. To meet the study's goals, the researcher created a scale, which was applied to workers in Jordanian mining companies. A descriptive analytical approach is performed on a sample size of 400.

The results of the study demonstrate that workplace health and safety has a definite impact on the overall quality of products and their achievement inside the businesses operating in Jordan. They also indicate that the absence of differences in the results of workers is attributed to the gender variable; health and safety, however, are intimately tied to overall quality. The study's classifications and results serve to illustrate them.

The study presents several recommendations, the most important of which is the need to adopt occupational health and safety standards for institutions, companies, and factories through which comprehensive quality standards are available in order to reach the highest standards.

Keywords: Occupational Health and Safety, Comprehensive Quality.

1. INTRODUCTION

An organization's business picture is always on achieving and maintaining its success. This makes it constantly seek to develop, improve, and modify its strategies in order to develop its products, and use renewed tools and means. The organization benefits from knowledge and science, and develops its employees' and circles' knowledge constantly. These efforts lead to the availability of new opportunities, and to investigate progress and continuous development.

At the present time, attention is focused on the effectiveness and efficiency of organizations and the successful performance of their various functions to achieve the desired goals for which they were established, whether these organizations are service or commercial, in order to raise the level of readiness of organizations, and enable organizations to predict and deal with changes with a methodology based on administrative foundations to come with the best results.

It can be said that the era in which we live is witnessing many rapid developments in all areas of economic, social, cultural or political life. Researchers and those interested in the field of organization realize that it is not possible to talk about an effective organization without paying attention to the human element as one of the most important elements in every successful organization.

The researcher believes that the ability to achieve excellence in operational institutions and organizations and their employees in a constructive manner is one of the most important features that a successful manager must possess.

Many international and Arab models of outstanding performance have emerged, such as the European model, the Japanese model, and the American model. There are approaches that aim to raise the bar for overall organizational performance by enhancing performance in every part of work where the entrance to excellence is one of the modern administrative entrances that seeks to improve the efficiency of organizations and increasing its ability to cope and keep pace with the surrounding changes by meeting the requirements of its beneficiaries, and improving the quality of services provided to them to achieve standards of quality and perfection (Othman et al., 2014).

Total quality management, including its standards, is a modern management philosophy grounded on a number of concepts; it is a mix between basic administrative means, innovative efforts, niche artistic skills, and continuous development.

Quality management has emerged as a modern trend in institutions, as its application has demonstrated the ability to address the causes of low service levels provided by institutions by gaining customer satisfaction. The search for customer expectations is an important task, and even a fundamental pillar on which the institution relies to achieve its objectives.

Quality management is viewed as a modern management philosophy that takes the form of a comprehensive management approach or system, based on radical positive changes for the various aspects within an organization, in order to improve and develop all components of the institution to achieve the highest possible level of performance (Alajmi and Khalil, 2022).

Quality management in organizations takes many forms when there is consistency with the specifications associated with each activity and doing the best that must be within the limits of the available capabilities to achieve the objectives of the various educational activities, and making it the responsibility of everyone to achieve distinction in performance by fulfilling the needs of workers (Hassan et al., 2019)

The researcher believes that total quality management related to institutional performance appears through the real desire of various organizations and institutions to improve their capabilities and achieve their production and service goals, which falls within the maintenance of quality standards and occupational safety for individuals and institutions.

It can be said that occupational health and safety is one of the basic pillars of the work of organizations and institutions with its various services, as it is the mask that protects members of society against risks and accidents, whether inside or outside the workplace, and this requires everyone to have full awareness and full conviction of the foundations of occupational health and safety in order to avoid injuries and accidents in different places.

It is known that accidents increase in the industrial facility and the mining sectors, due to several things represented in the presence of conditions that differ from the

conditions of the normal lifestyle in terms of temperature and humidity, air pollution, the presence of sharp machines, pistons and compressors, and the use of many dangerous materials such as caustic burners, which causes many from occupational diseases, not to mention the possibility of electric shocks to individuals, and fires, which result in risks that may affect the worker and his family and society in general (Al-Bsheish, 2017).

The industrial mining sector in Jordan stands on the threshold of increasing its products in the local markets, in light of the frantic competition imposed on it by foreign goods, and presenting it as an authentic national alternative to the various goods that it promotes within the Jordanian market. The industrial mining sector in Jordan represents 11.2% of the size of Jordanian industries, as stated by the Jordanian Ministry of Labor.

Based on the foregoing, there is a need to investigate the relationship between total quality management through the special role of occupational health and safety, given that each is in the interest of the other, and thus investing the capabilities of organizations in achieving the greatest possible quality and development.

Mining is one of the largest industrial sectors, and Jordan has two important natural resources, which are phosphate and potash. The sector has large industries with respect to investment volume, which have a high contribution on the employment of local labor and satisfy the demands of all types of products coming from the market. The sector employs the latest methods not only in the process of extracting natural resources, but for their transformation into products, as well.

This study comes as a real response to research into the impact of occupational health and safety on total quality management, where the annual report of the Social Security Corporation (2016) showed that there is an increase in work accidents in this sector, where the death rate as a result of injuries in this sector reached 67.8% as the highest sector in which deaths occur as a result of injuries, and it is one of the sensitive and important sectors in industries it was necessary to stand on the measures of this sector in improving services, continuity of industries, and maintaining occupational health and safety by maintaining standards total quality management.

The importance of the study appears in two main aspects:

First aspect: Theoretical importance

The theoretical importance of this study appears in the attempt to achieve modest additions to the Arab scientific library, adopting a scientific strategy capable of achieving the study's objectives will make it easier for researchers and those who are interested in the topic of quality management to find it in light of the difficulties and problems that organizations may encounter. This study will also explain the significance of health and safety, which is one of the key administrative concerns and the focus of businesses of all kinds, through which organizations can invest experiences and expertise in developing their performance in general, and the industrial mining sector in Jordan in particular, and a statement of the impact between them, as well as outlining the relevant elements and guiding them to achieve a high degree of performance in the industry.

The second aspect: Practical importance

The practical significance of this study is done by identifying how the Jordanian industrial mining sector's quality management is impacted by health and safety, and benefiting from its results by the sector, as well as the possibility of benefiting from the recommendations that will come out in order to improve the performance of this sector better, and keep abreast of developments that witnessed by the world. The importance of the study from a practical point of view is the possibility for researchers to benefit from its results so that it becomes the nucleus for other similar studies.

This study mainly aims to identify the impact of occupational health and safety between total quality management in the Jordanian industrial mining sector, and to achieve a number of secondary objectives, including:

1. To identify the level of relative importance of the study variables (occupational health and safety, total quality management) within the mining industry of Jordan.
2. A description of how comprehensive quality management is affected from occupational health and safety in the industrial mining sector in Jordan.
3. Building a theoretical framework related to study variables by reviewing previous relevant literature.

The problem of the current study is occupational health and safety, as the Jordanian industrial mining sector seeks to highlight the excellence in performance and the excellence of the products it offers to the local and foreign market. The Jordanian mining industries sector is one of the most important sectors that have an impact on the overall economy and contribute to increasing the gross domestic product and achieving economic growth in general. According to statistics from the Jordanian Ministry of Labor for the year 2018, this sector's growth rate was around 13%, and it made up 0.2 points, or 1.9% to 2%, of the GDP.

The researcher believes that it is possible for total quality management to affect occupational health and safety in the presence of occupational health and safety as a variable that explains this effect ;accordingly, In the Jordanian industrial mining sector, this study sought to determine how health and safety affected quality management.

The following major issue serves as a representation of the study's problem:

What effect does health and safety have on quality management in the industrial mining sector in Jordan?

This question emerges the following sub-questions:

1. What is the level of relative importance of the study variables (occupational health and safety, total quality management) in the mining industry in Jordan?
2. How is total quality management affected from occupational health and safety in the industrial mining sector in Jordan?

For the purposes of the study, procedural definitions have been adopted, which are:

– *Occupational health and safety*: The administrative procedures and activities for protecting workers from the risks of injuries and accidents in the Jordanian industrial mining sector.

– *Reducing labor cost*: It is the process of reducing the material cost due to work injuries by the *senior* management in the Jordanian industrial mining sector.

– *Providing a healthy and low-risk work environment*: The process of providing a safe work environment for the Jordanian industrial mining sector to reduce the risks of work injuries.

– *Providing the appropriate work system*: It is the procedure by which work injuries are established using regular records, protection devices, and equipment.

– *Strengthening human relations between management and workers*: The process by which health and safety standards for workers are observed, which gives the Jordanian industrial mining sector a good reputation.

– *Total quality management*: It is the conformity of the service with the standards previously set for this service in the Jordanian industrial mining sector.

– *Senior management support*: This concept is based on the participation of employees through reaching more quality decisions as a result of increasing the ideas presented by employees participating in work and the quality industry, as well as improving the level of implementation of these decisions.

– *Continuous improvement*: It is defined as strategic planning, studying the market, competition, and future needs, following up on changes in the needs and desires of consumers, following up on economic developments, specifications and standards for quality delivery, keeping pace with the technology used, and setting plans to ensure the quality-of-service delivery, and follow-up and implementation of these plans.

– *Customer focus*: It includes identifying internal and external customers, determining the needs and desires of customers, following up on their complaints and working to solve them, while taking their opinions when developing new products to maintain existing customers and obtain new customers.

– *Empowering employees*: It is based on training employees to enable them to perform the tasks required of them efficiently and effectively .

– *Strategic planning for quality*: It is based on developing a strategic plan that includes all the *elements* and components through which high levels of quality can be reached.

On the other hand, the limits of the study are as follows:

1. Implementation area limits: The study is conducted in the Jordanian industrial mining sector companies.

2. Time horizon limits: The study will be conducted between 2021-2022.
3. Objective (scientific limits): The study is limited to studying the following variables:
 - Total quality management (supporting senior management, continuous improvement, customer focus, employee empowerment, and strategic quality planning).
 - Health and safety.
4. Human limits: The study includes all employees at all administrative levels in the Jordanian industrial mining sector companies.

The study is organized as follows: Chapter 2 gives a literature review on previous work related with the subject. The methodology is explained in Chapter 3, and its implementation in the Jordanian mining sector is presented in Chapter 4. The study concludes in Chapter 5, together with some recommendations. Finally, the study scale is provided in Appendix A.

2. LITERATURE REVIEW

This chapter deals with the basic concepts of the study represented in health and safety, also quality management. This chapter also includes previous studies in the Arab and foreign environments.

Living in a setting where profound and extensive changes are occurring in many different sectors, particularly in the cognitive, technical, administrative, and informational ones. The association between organizational change and various aspects of the organization—such as its vision and mission, operations, tasks, organizational structures, or employee behavior and trends—as well as the organization's procedures and techniques used—makes organizational change one of the most significant types of change in business organizations. The goal of this is the search for better ways to operate.

Change is a process that all companies must go through. The movement of these organizations pauses without the process of change and development, while the environment as a whole quickly moves in the other direction. Organizational change is defined here as those sudden changes that happen under specific conditions, whether social, economic, or political, as opposed to a work that is planned in advance based on scientific principles and done within the parameters of the organization's established goals. As a result, change is not seen as an end in and of itself but rather as a means to the best outcomes.

Organizations constantly work to maintain their equilibrium and coexist with their environment to the greatest extent possible, but on the way they may come across obstacles that force them to work on making various changes, whether in their patterns, structures, or even their activities. As a result, organizations must constantly work to ensure their survival by striving to understand the environment and the changes taking place in it and trying to develop strategies to adapt its Understanding, perceiving, creating, and adapting to change are the key concepts of contemporary management theory. Today, the main objective of management is to replace chaos with logic and scientific prediction. Change is increasingly viewed as the main factor in success and competitive advantage of organizations.

The significance of change is found in the fact that it has evolved into one of the most crucial conditions for advancement and development in today's organizations,

and it is no longer viewed as a tool used by some institutions under specific circumstances, after which all the efforts made revert to a stagnant and stable state. Because modern organizations share the necessity of change and development to keep up with the various changes in their external surroundings, this constant movement that does not abate with change and development has become a hallmark of these organizations' attempts to achieve stability and success.

The need for change appears as a result of internal or external factors for the organization. The internal factors are those that stem from the possibilities of organizational disturbances, and incorporate information that reflect attempts for change, such as shifting organizational goals, low productivity, excessive costs, and an uncomfortable work environment. External factors include changes in knowledge, technology, economic opportunities, the structural makeup of political forces, environmental considerations, ideological and cultural factors, as well as forces in the organization's external environment that would make it more difficult for it to keep up with uncertainty.

Increased external competition, particularly in light of so-called globalization and market openings, as well as changes of the international interest rates and currency exchange rates that affect how imports and exports are conducted, alter the rules of the work. As a result, openness on well-protected markets forces significant strategic, structural, and cultural changes in the countries that are involved.

It is evident that the rapid advancement of science in all facets of life and the advancement of technology in developed nations led to parallel changes in the workforce structures, as they moved from their traditional hierarchical form to organizations of minds and knowledge and not organizations of routine work, and this resulted in a change in training curricula and a change in performance standards and access to total quality. Among the most important technological changes are in the means of transportation and communications, which have eliminated the borders that separated countries, and the rapid technological development is exhibited in the digitization of equipment and machines, and the information revolution that appear through information and communication technology. Information has been a driving force behind the design of information systems (decision-assisting systems, expert systems).

It is to provide a safe work environment free of factors that lead to the causes of danger to which individuals working in organizations are exposed (Reese, 2018) .

The field that aims to protect the various categories of workers from dangerous influences by addressing the personal ,technical and environmental sources that lead to these risks in a way that allows workers to enjoy appropriate physical and social health (Farhana, 2019).

Preserving three of the fundamental components of production: the human person, the material, and the environment is essential. This can be accomplished by forming a safe and pleasant working environment to protect the human element from accidents and occupational diseases, and by eliminating the possibility of damage and loss of the production elements, so that costs will decrease and efficiency will increase (Goetsch et al., 2018).

Through these definitions that we have been exposed to, we notice clear differences because each one has his own destination ,policy and specialization. In general, a definition of occupational safety can be formulated as follows:

It is a set of procedures and laws that aim to protect the elements of production, primarily the human element, from exposure to accidents during work, and to provide the physical and psychological conditions for performing work with high productivity.

The main goals of the concept of occupational health and safety, or OHS, are to reduce the risks that employees face due to the use of numerous machines and equipment, as well as their health from occupational diseases brought on by the performance of professional work, as well as their safety in the workplace itself and the risks that come with it. To do this, you should check the following (Blokdyk, 2019):

- Protection of the human element.
- Developing skills ,expertise and specializations.
- Raising the technical level of workers with continuous training and training.
- Determining the performance methods and managing them with the least effort and the least risks.
- Giving confidence to enterprises and encouraging them constantly.
- Participation in the development of the economy.

- Informing workers of the need to follow health and safety rules and regulations
- Creating a risk-free working environment by implementing the required safety procedures and actions.
- Reducing the cost of production by saving the money that is paid as a result of the occurrence of work accidents.
- Reducing the cost of expenses related to lost working time as a result of work injuries.

2.1. Occupational Health and Safety Administration

Health and safety, which refers to maintaining and protecting workers from injuries brought on by work accidents as well as occupational health, have received a lot of attention from the human resources department in order to protect the workforce from the detrimental effects of work accidents and injuries.

The great concern against accidents that represent the loss that occurs to the human element during performance, as a result of his wrong behavior or external circumstances refers to everything that happens during work and leads to disruption of the ability of workers to perform until full recovery (Kelloway et al., 2020).

The significance of managing workplace health and safety is:

- Preventing workplace accidents: good management of the workplace protects an organization from various issues brought on by workplace accidents and health conditions, which are expensive both financially and morally.
- Creating a safe and risk-free work environment: Management is in charge of setting up the proper atmosphere free from hazards that could endanger employees while they are at work.
- Providing the appropriate work system :by providing devices and protective equipment and using regular records about any injury, illnesses and accidents.
- Reducing the psychological impacts of accidents and industrial diseases: accidents have an impact on both the organization's employees' and the customers' feelings in addition to the physical components of their work.
- Strengthening human relations between management and workers :this is by providing protection for workers and taking care by the government, giving them a

sense of importance, and creating cooperative relationships between them and their management.

2.2. Occupational Health and Safety Responsibility

The responsibility for safety is the responsibility of all parties at the administrative and non-administrative levels, which is applicable for any state, institution, or company level. This responsibility can be summarized as follows (Marriott et al., 2019):

State responsibility: The state is in charge of enacting legislation, laws, and logical rules for industrial safety work in all production and industrial activities.

In accordance with each individual's area of expertise, senior management is in charge of drafting laws and rules as well as safety requirements for the organizations and industrial establishments that are a part of it.

The administration is responsible for overseeing the application and implementation of the laws and regulations mentioned above that were issued by this state or institution, as well as the safety laws and regulations that are specific to each industrial activity, so its role is seen as important and primary.

Responsibility of the department or supervisors: It is the direct field responsibility for workers inside companies or factories. The direct supervisor is the link between management and workers, who is responsible for applying regulations and safety rules and controlling the extent of commitment.

Procedures followed by the occupational health and safety department:

Technical research stage: it is the most important function in collecting all the necessary information that contributes to the study of health and safety in the workplace in the organization, as it analyzes the causes of work accidents and occupational diseases and prepares its own statistics as well as prepares programs and this is in technical and organizational documents (Farhana, 2019).

Control stage: this section inspects, monitors, and verifies the safety of the place and production machines, organizes and activates preventive awareness campaigns for workers, takes care of the professional testing of workers and trains workers and their supervisors.

Coordination stage: coordination with the various departments of the administration from the occupational safety and labor medicine committees, the union

as well as workers' representatives as well as the concerned authorities in this field such as social security (Jensen, 2019).

The dimensions of occupational health and safety are (Tawiah, 2018):

1. Reducing work costs: through the interest of senior management in developing a plan to manage the work environment appropriately to spare the organization the multiple problems due to accidents and occupational diseases, which are negatively reflected on organizations due to the material and moral costs paid by organizations to workers, and this may lead to disruption of the work environment.

2. Providing a healthy and low-risk work environment: senior management must provide places free from risks so as not to harm workers at work, especially in light of the technological development in the industrial field, and management must work to reduce the psychological effects of accidents and industrial diseases .

3. Providing the appropriate work system: by providing protective devices and equipment, and using regular records in which work injuries and accidents are recorded.

4. Improving management-employee relationships: An organization's reputation must be positive among competitors as a result of its management of occupational health and safety, which attracts qualified candidates (Stanojeska et al., 2020).

Because a lack of quality attention increases the amount of time it takes to perform and complete tasks as well as the amount of monitoring work, which in turn increases the number of complaints from service recipients, industrial organizations strive to achieve high and advanced levels by developing products and services in accordance with customer demand. The institution's methods for providing services to the client frequently center on monitoring the goals and making sure they are met. Because of this, these processes are frequently drawn-out and stiff, which has an adverse effect on the client. Reduce the time needed to finish activities for the client, which is one of the key comprehensive quality goals, and it requires doing the right things, the right way the first time, and this means reducing the damaged things or re-doing them and thus reducing costs.

In today's world, quality has become one of the most important management principles. In the past, management believed that the success of the company was only

based on manufacturing products and providing services faster and cheaper, then trying to sell them in the market, and offering after-sales services.

Total quality management is considered to be a complex administrative process, in which the focus and emphasis is on all aspects of quality management in all respects in the organization. It is among the strategic management methods of an organization, and is depicted by three advantages (Aly and Akpovi, 2019):

- Inclusion: total means the participation of all employees in the organization.
- Quality: the application of quality principles throughout the organization.
- Management: (management the principles of quality management include all levels of management and all administrative functions.

2.3. Introduction to Total Quality Management

This entry is considered an essential complement to the two entrances to strategic planning and organizational development, and an essential means to achieve excellence in performance to be achieved in light of the openness of markets, and this is what total quality management provides. It is a management philosophy that aims to bring about a comprehensive and continuous development for all stages and aspects of performance, to carry out continuous improvement of the various operations of the facility and the optimal use of resources, in order to achieve customer satisfaction (Aly and Akpovi, 2019).

Organizations tend to adopt the philosophy of total quality management because it is a comprehensive, planned and continuous way to achieve its goals and enhance its capabilities in facing the requirements of development and change factors. Excellence in performance, which is concerned in addition to the full response to the demands of customers; on innovation ,creativity and concern for the work environment in a framework aimed at improving the overall performance of the organization (Akhtar, 2019).

2.4. The Total Quality Management Philosophy

Visuals, foremost of which are the visuals and requirements of the main customers, the support of senior management and the participation and motivation of employees. To guide and control improvements, and train employees of the facility through training courses to build a culture of quality and develop improvement skills.

Operational programs for improvement are developed through an integrated set of processes including inputs, implementation steps and their sequence, the role of each administrative unit in implementation, manuals and procedures used, coordination mechanisms and outputs, resources required for implementation, and standards for monitoring and evaluation of results (Rathinam, 2020).

Takes into account that the goal is to achieve continuous improvement, and not only to carry out development at a certain stage, so that the continuity of improvement and development of existing products or services and the development of other products and services according to emerging needs, and continually to satisfy customer needs and achieve their satisfaction.

The philosophy of total quality management is based on paying attention to preventive measures that prevent errors from occurring instead of corrective measures that address errors after they occur, so that work is performed in any of the operations correctly and from the first time (Zaire, 2020).

2.5. Stages of Applying Total Quality Management

The first stage - Quality planning (Plan): in which the basic features of the quality system are developed, starting with defining the customers' needs and expectations, and setting specific goals in accordance with these needs, in the light of which the specifications and standards that the good or service will have, taking into consideration the competitors' capabilities in market.

The second stage - Implementation or action (Do): in which the operational processes are implemented in light of the previous stage, where the work team sets a timetable for the completion of these operations and estimates the resources required for this, and through this leads to the production of a group of goods and services (Tricker, 2019).

The third stage - Examination or evaluation (Check): in this stage, the new situation is evaluated by collecting and analyzing data and using some criteria to compare the previous situation with the new situation in order to identify the level of change that has occurred or not.

The fourth stage - (Act): in which improvement and development are carried out on the goods and services provided in light of the results of the evaluation in the previous stage (Tricker, 2019).

2.6. Dimensions of Total Quality Management

The dimensions of service quality are among the important topics that have received attention from many researchers and those interested in the dimensions or aspects through which the level of service provided by health and hospital centers can be improved, as service quality has two dimensions; tangible material quality represented by what the customer obtains from the service through which he obtains and interactive quality represented by performance as well as the quality of the organization .

Continuous improvement: It is defined as strategic planning, studying the market, competition and future needs, following up on changes in the needs and desires of consumers, and following up economic developments, specifications and standards for providing quality while keeping pace with technology used, and developing plans to ensure the provision of quality service delivery, and follow-up and implementation of these plans.

Making decisions based on information: It is based on the availability of the necessary information that would help in the process of making sound decisions, contribute to raising the level of total quality and help the decision maker to identify appropriate alternatives and take the best among them.

Senior management support: This concept is based on employee participation and empowerment through reaching results in better quality decisions as a result of more ideas provided by employees involved in the work and industry quality as well as improving the level of implementation of these decisions.

Customer focus: It includes identification of external clients and entrants, determine the needs and desires of customers, follow up on their complaints and work on solving them with taking their opinions when developing new products to retain and obtain existing customers on new clients.

The researcher believes that management the quality overall focus and care with quality in an all levels administrative loyal all activities and all resources available to achieve goals and facility, management the quality overall no falling off from its interest role the worker or the observant and methods examination or censorship the quality statistically all these roles still list and done developed and improve it, even complete implementation principles management the quality overall must take in a

consideration the following: a necessity adoption of senior management for concepts of the quality and giving it priority occasion, search on ways sponsor continuous improvement to perform business, investigation desires beneficiaries their aspirations, focus in implementation concepts the quality on phase the work not just on the service final, engaging employees in efforts own improve the quality beginning from stages initial, application curriculum scientific in analyzing the problems and taking decisions, affirmation on must discrimination between efforts the individual and efforts community.

2.7. Occupational Studies

Previous studies were divided based on the items of the title of this study titled the impact of occupational health and safety on total quality management in the Jordanian industrial mining sector, previous studies related to health and safety in workplace, and previous studies on quality management, due to the absence of studies directly linked between the study variables with each other after the researcher searched the different databases, and they were classified according to the study variables, and arranged chronologically from newest to oldest.

2.7.1 Studies in the Arab Environment

The study's objective by Zuaier and Kasmi (2019) is to determine which occupational safety and security mechanisms were in place for health institution employees and how much they contributed to enhancing the standard of care from the perspective of service providers. After conducting the statistical analysis, the study came to the conclusion that the level of implementing occupational security and safety measures in the healthcare facility is acceptable, and that there is an inverse correlation between the level of occupational security and safety systems and the quality of services provided from the perspective of service providers.

Snouber et al. (2017)'s study in a gas transmission and transfer facility in Arzew-Oran, Algeria, aims to evaluate occupational risks and ascertain the degree of adherence to safety requirements in the case of incidents. Twenty-nine male and female workers made up the sample, which was analyzed using the descriptive analytical method. Accidents, their repetition, conducting interviews, and a questionnaire. The study's statistical analysis revealed a medium link between organizational characteristics and the psychological and social risk factors that

contribute to workplace stress. The report suggested undertaking additional research on risk assessment.

The study by Ajeila and Ben Jarwa (2018) aims to shed light on the extent to which organizations offer tools and programs for occupational health and safety have aided in raising civil protection workers' efficiency in Algeria. A sample of 100 male and female employees underwent observation and interviews in addition to the survey approach. Conversations at work and the unpleasant nature of employment genuinely have a detrimental impact on employees' performance and the performance of institutions, necessitating the adoption of safety measures by institutions.

The study by Al-Mughni (2006) aimed to reveal the extent of the reality of occupational safety and security measures used in the manufacturing sector facilities in Gaza strip. The survey method was used, and observation was used with a sample of 258 male and female workers. The results showed that there is a significant correlation between the effectiveness of the procedures of occupational health and safety and the obligation to apply, provide and develop laws, regulations at the level of regulatory and industrial institutions.

The study's goal by Abu Ziadeh (2019) was to demonstrate the idea of overall quality management's level of applicability in Palestine Telecommunications Company and its impact on the level of administrative creativity. The descriptive analytical approach was used, and the questionnaire was used as a tool for collecting study data from a sample of 177 individuals, and after conducting the statistical analysis process, the study concluded: there is a statistically significant effect at the level of significance for the overall quality management dimensions combined (the abstention and support of senior management, customer focus, employee participation and motivation, employee training and qualification, information systems, data collection, strategic planning, continuity of improvement, team building, quality measurement performance in service provision) at the level of administrative creativity in its dimensions (the scientific method in solving problems, making decisions for change, communication capacity, taking risks, taking risks, encouraging and supporting creativity).

In the work by Attia et al. (2019), in order to foster administrative innovation in Algerian telecom, the study set out to demonstrate the function of overall quality

management. Through the use of a questionnaire given to a sample of 40 Algerian telecom workers, the descriptive analytical approach was adopted.

The study of Al-Omari et al. (2017) aimed to analyze the elements of total quality and their impact on achieving superiority in the value of business in terms of (quality, service, and cost) in the hospitals of the royal medical services. Customer, quality acquisition, scientific approach to decision-making and problem solving, long-term commitment, teamwork, continuous improvement of operations, training and education, employee engagement and empowerment, freedom through control, and unity of purpose). The study population consisted of all military hospitals affiliated with the royal medical services. As for the inspection unit, it consisted of all the employees in the quality departments located in the medical city center, where their number reached 35, a questionnaire was distributed to them. Among the most important findings of the study: the presence of a positive and strong impact of the elements of total quality in the business excellence in the hospitals of the royal medical services, the strongest and most influential was empowerment, focus on the customer and the scientific method in making decisions and solving problems. Among the recommendations made was sustainability in the application of total quality with its various elements, with a focus on the elements that had the strongest impact.

Al-Farhan's study (2011) examines how comprehensive quality management affects employee empowerment. This study aimed to measure the quality overall comp industry pharmaceutical Jordanian, from during knowledge dimensions for that quality (Focus on risks, and orientation on people of interest, and orientation toward divide the work, and direction toward change), and from then study effect management the quality overall on enable staff in companies researched. And this is through the application of pharmaceutical companies, which was used until the end of 2008 in Jordan, where 115 questionnaires were distributed, and the response rate reached 66%, with an average of 75 questionnaires, and by using appropriate methods in collecting and analyzing data to test hypotheses, it was found that there is a significant link between management Comprehensive and quality in general in the field of pharmaceutical industry in Jordan, and that there are indicative statistical traces of comprehensive management and quality individually, and the empowerment of employees as a whole. A set of recommendations were presented based on the

objectives and results of the study, which focus on the necessary interest that strengthens quality in general, scientifically and purposefully.

2.7.2 Studies in the Foreign Environment

The study by Karimi et al. (2020) aims to show the impact of health and safety management system application on functional indicators: a five-year study on the steel industry.

This study aimed to show the effects of applying the health and safety management system on health and safety performance indicators in an industrial site in Iran between years 2015-2019. The sample for the study, which employed the descriptive analytical method, included 21 industrial sites. The study found a decrease in accidents after the application of the health and safety management system and the improvement of health indicators, personal protection rates, education, preparation, and legal requirements.

Yu et al. (2019) consider that the analysis of factors affecting occupational health and safety has four characteristics: human, machine, environment, and management. After that, building the influential factor indicator system, analyzing the weights of the indicator using the analytical work network process, and adding the secondary and main influencing indicators. The study recommended the necessity of enhancing safety culture, work habits, equipment protection, avoiding toxic chemicals, and the need to adopt its composition of management and control measures because it is effective in reducing the percentage of occupational diseases and injuries and improving the overall performance of health and safety.

Dodoo and Al-Samarrie (2018) is a review on the elements that lead workers to act in an unsafe manner. The study used a review of 70 major empirical studies that dealt with unsafe behaviors within occupational health and safety research and collected them in eight main business areas: construction, health care, non-sector projects formal, manufacturing and mining, energy, agriculture, and multidimensional fields. The study concluded that it was limited to accurate knowledge of health and safety issues, violation of safety rules, work pressures, pressure, and failure to use protective equipment, which are considered among the main factors for unsafe behavior. The study provided assistance to safety managers in understanding how to motivate workers and employees to participate in sound health and safety practices.

The study by Razali (2018) was interested in researching the relationship between safety management practices and safe performance in the industries of the port Basir in Malaysia, and it was utilized in order to meet the study's goals. 300 staff members received the questionnaire, and 146 questionnaires were retrieved. The study found that safety management practices are an important predictor of safe performance in organizations and to avoid accidents during working hours, through management commitment, safety training, inclusive communication and nutrition, and workplace safety promotion.

In the study by Amponsah-Tawiah and Mensah (2016), it was determined whether there is a connection between workplace health and safety and the employees' organizational commitment in the coal mining sector. The investigation looks at corporate commitment in its various forms, as well as workplace health and safety. According on a survey design and a random sampling technique, the study tested respondents. 400 questionnaires were distributed, of which 370 valid questionnaires were retrieved for the purposes of statistical analysis. Additionally, to ascertain the connection and impact between the variables, the study performed multiple regression analysis and correlation analysis. The findings revealed a significant and favorable association between health and safety management and ongoing compliance. The Ghanaian mining industry's management should be aware that employees who feel secure and safe while carrying out their responsibilities grow emotionally attached and have a feeling of belonging, as well as dedication to the labor union. The management must continue to protect the health and safety of workers.

The main objective of Stanojeska et al. (2020)'s study was to analyze the active transition of quality management systems to quality management under the influence of the commitment of senior management and its motivation to motivate the employee. The study used a quantitative research methodology with system activities and a review of previous studies on the main influencing factors, such as designing a perceptual model, collecting data, designing an induction model, experimenting with a simulation model, analyzing and discussing the results. Data were collected from 82 companies in the food processing industry in Macedonia. The results showed that senior management can influence the development of the quality management system, and should work in communicating the company's philosophy to the workers and

include their involvement to the management's efforts in quality and improvement activities.

What distinguishes this study from previous studies?

The researcher was able to review the differences from other studies in terms of several aspects, as follows:

- In terms of its objectives: This study seeks to determine how the Jordanian mining industry's whole quality management is impacted by occupational health and safety. Reaching new results that were not reached by previous studies, as this study, to the researcher's knowledge, is one of the first studies that dealt with the impact of occupational health and safety in total quality management and the mediating role of organizational learning in the Jordanian mining sector, defining the term "health and safety in work place" as a starting point, and then defining the concept of total quality management, leading to determining the mediating role of organizational learning in interpreting the impact of occupational health and safety on quality management, Additionally, the Jordanian mining industry's organizational learning has a mediating effect.

This study aims to provide useful scientific material as a reference for a study with other changes, and it can enrich the knowledge and administrative store.

- In terms of its variables: This study is distinguished in terms of its variables, as it was noted that there are no relevant previous studies that combine study variables, especially Arab studies, so there is a need for further research and study.

- In terms of the study environment: After a thorough review of previous work on the study variables (occupational health and safety, total quality management), it was found that most of them were applied in Arab and foreign environments, each with its own characteristics. Hence, the current study, which is implemented in the mining sector of Jordan, differentiates it from previous work.

3. METHODOLOGY

With a presentation of the methods and procedures used by the researcher in the study in terms of the study methodology, the study population, the sample and how to choose it, the study tools used in data collection, and the clarification of the statistical methods that were used in analyzing the data and extracting the results.

3.1. Study Approach

The descriptive analytical method was used, which is appropriate to the nature of the study, to describe, analyze and interpret the results of the responses of the study sample represented by workers in the Jordanian industrial mining sector.

The descriptive analytical approach is among the important branches of descriptive research, and let us recall together the beginnings of the scientific research journey with its executive body (written), which begins with the researcher choosing a specific study topic and identity, and then choosing the appropriate title, and then proceeding to put the brief introduction, and among the elements the task is also for the researcher to select one or more suitable scientific approaches; through which he or she can find the ideal way to detail the research axes, and here the descriptive-analytical approach appears as an important method that helps to describe scientific problems accurately, to reach positive conclusions, and is suitable for research that includes trends, features and characteristics, and this is represented in messages and social studies in general, which do not depend on numbers as evidence in the conclusion of the conclusion, or research that includes features and numbers at the same time, and we will dedicate the lines of our article to talk about the descriptive-analytical approach in detail (Melhem and Al Qudah, 2019).

3.2. Study Community

The study population consists of all employees at all administrative levels in industrial mining companies in Jordan, which are 16 companies, and the number of their employees is 8972 as given in Table 1 below (as of year 2020).

Table 1. Mining companies in Jordan

No.	Company Name	Number of Employees	Sample Size
1	Jordan Phosphate Mines Company	3293	147
2	Arab Potash Company	2360	105
3	Jordan Cement Factories Co. Ltd.	713	32
4	Jordan Magnesia Company	92	4
5	International Silica Industry Company	99	4
6	Northern Cement Company	158	7
7	General Mining	87	4
8	Travertine Company	135	6
9	Gulf Quarries Company	231	10
10	Al-Masani Al-Kubra Mining Company	450	20
11	Modern Cement Company and Mining	350	16
12	Arab Mining Company	154	7
13	Site Group for Services & Well Drilling	314	14
14	Petra Calcium Carbonate Company	215	10
15	Rajhi Cement Company	272	12
16	Jordan Carbonate Company	49	2
Total		8972	400

3.3. Study Samples

The researcher relies on the sampling strategy, where a proportional, stratified sample representing the study population of 400 individuals was drawn, according to the sampling table and depending on the size of the total community so that the permissible margin of error is 5% (Al-Najjar et al., 2020) .The sampling method will be based on the following equation:

$$(\text{Class size/ population size}) * \text{sample}$$

In the current study, this value is calculated as:

$$\frac{8972}{400} * 16 = 358.88$$

A stratified sample has the advantage over both a simple and a regular random sample, since it represents the original population accurately. Moreover, it helps to reduce the complete variance of the sample, by making a segmentation of the sample units in a way that makes the variance within the stratum as small as possible. It is possible to obtain a high degree of accuracy in the result, by selecting a stratified sample smaller than the simple random sample, keeping in mind that the accuracy of the data obtained from any sample depends on its size and the homogeneity of the population.

The sampling unit was represented by all workers in industrial mining companies in Jordan, and the target in this study is 400 of all workers at all administrative levels in the 16 industrial mining companies in Jordan.

3.4. Data Collection Methods

In this study, the researcher relies on the use of the descriptive analytical method and the method of the field study. The study also relies on several methods for collecting the necessary data, which are as follows:

Secondary sources:

The researcher has structured the theoretical framework of this study by using secondary data sources; these are the relevant works found from Arab and foreign books, references, periodicals, articles, reports, research and reading on various internet sites. The researcher's goal in employing secondary sources is to determine

the foundations and scientific methods in the related area, and to present an overview of the latest developments in the topic.

Primary sources:

These are the data that will be obtained through a questionnaire for the current study, which the researcher will design and develop to cover the hypotheses on which it is based, and using evaluation statements to determine the answers of the study sample.

3.5. Study Tools

Relied on the questionnaire to obtain the necessary data for the study, as it is the appropriate tool for this study and the most suitable for the study curriculum. The questionnaire consists of the following parts:

Part 1: Includes a request for information on the personal and functional characteristics of the study sample managers (gender, age, educational qualification, and number of experience years).

Part 2: Total quality management

This part has five basic axes to measure total quality management for workers in the Jordanian mining included sector, which are as follows:

- Senior management support: Includes 10 paragraphs.
- Continuous improvement: Includes 10 paragraphs.
- Focus on the customer: Includes 10 paragraphs.
- Empowering workers: Includes 10 paragraphs.
- Strategic planning for quality: Includes 10 paragraphs.

This part consists of 30 paragraphs that reflect the level of total quality management for workers in the Jordanian mining sector.

Part 3: Occupational health and safety

This part included measuring the paragraphs devoted to the occupational health and safety axis (the modified role), as there were 12 elements included to gauge if the objective had been achieved.

The scale has previously been prepared in its initial form, reviewing previous studies related to each part of the scale as studies (Al-Adaileh, 2017; Al-Dhaafri et al., 2016; Allah Dad, 2017; Demir et al., 2018; Gonzalez et al., 2018 ;Stanojeska et al., 2020; Tawiah, 2018).

3.6. Validity and Stability of the Tool

Authenticity of the tool was revealed in two ways:

Virtual honesty:

The apparent validity (face validity) of the study scale was extracted by presenting its initial image, consisting of three parts , to a group of specialized arbitrators, and it consisted of 15 professors from specialists in administrative sciences who hold PhDs from the departments of administration and business in Jordanian universities (The Hashemite, Yarmouk, Jordanian, Al Al-Bayt, and Islamic Sciences), in order to indicate the extent of clarity of the phrases , and their relevance to the target sample of the current study and its achievement of the goal for which it was set the arbitrators were asked to express their opinion on these paragraphs in terms of their relevance to the content of the scale, adding any modification to some paragraphs, adding or rejecting some paragraphs if they were repeated, and the percentage of agreement between the arbitrators was 89%, and some language modifications were made to some of the paragraphs in light of the arbitrators' amendments, the scale has remained in its final form and consists of three main parts.

Construct validity:

In order to find the construct validity of the scale, the correlation coefficients of the scale items with the total score were obtained in an exploratory sample that consisted of 60 individuals from the study population, who are outside the current study sample, as the correlation coefficient here represents an indication of honesty for each item in the form of a correlation coefficient between each paragraph and between the total score, and the correlation coefficients of the paragraphs with the tool as a whole ranged between (0.353-0.502). Table 2 shows the correlation coefficients between paragraphs and the total score of the paragraphs of the part devoted to measuring total quality management.

Table 2. Total quality management scale parameters

Paragraph	Correlation Coefficient with the Tool
Senior management support	0.353*
Continuous improvement	0.533**
Focus on the customer	0.456*
Empowering workers	0.419*
Strategic planning for quality	0.423*
Total quality management	0.502**

* Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

Table 3 shows correlation coefficients between paragraphs and the total score of the paragraphs of the part devoted to measuring occupational health and safety.

Table 3. Occupational health and safety measures

Paragraph	Correlation Coefficient with the Tool
Preventing workplace accidents	0.621**
Creating a safe and risk-free work environment	0.441*
Providing the appropriate work system	0.384*
Reducing the psychological impacts of accidents and industrial diseases	0.593**
Strengthening human relations between management and workers	0.419*
Occupational health and safety	0.524**

* Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

It should be noted that all correlation coefficients had acceptable and statistically significant degrees; hence, there was no need to omit these paragraphs.

Stability of the study instrument:

The stability of the scale was extracted in two ways: the study scale was applied, in its final form, the test-retest, by applying the scale, and reapplying it after two weeks on a group consisting of 60 individuals from outside the study sample and from its community, and then the Pearson correlation coefficient was calculated between their estimates in both times, as it reached 0.90. The stability coefficient was also calculated by the internal consistency method according to Cronbach's alpha test, as it reached 0.90, and these values were considered appropriate for the purposes of this study.

In order to show the reliability coefficient of the scale as a whole, Table 4 displays the results of the stability coefficient using Cronbach's alpha test for each part of the scale. The reliability coefficient was obtained by using this test for each part of the scale.

Table 4. Stability coefficient results using Cronbach's alpha test

The Scale	Stability Coefficient
Total quality management	0.89
Occupational health and safety	0.90
Scale	0.90

How to apply and correct:

The study scale in its final form consisted of three parts to measure and achieve the goal for which it was set. Some of these phrases were formulated in a positive form, and others were formulated in a negative form.

All these results are calculated to determine the total score of the people who took the test, and the higher results are taken in line with the goals of the study.

Based on the instructions of the scale that show the respondent (workers) how to respond, the respondent must choose the answer that is appropriate by placing a sign (X) that agrees with his feelings, attitudes and behavior in situations related to him,

and placing a sign (X) in the appropriate place in front of it in the questionnaire according to the order on the quintet scale. Table 5 shows the distribution and correction of the answers.

Table 5. Scale for answering the paragraphs

Always	Mostly	Sometimes	Rarely	Never
5	4	3	2	1

In order to correct the answers on the scale, five categories were identified for the answers for each paragraph, and corrected according to the following notation:

Always: 5 degrees, **Mostly:** 4 degrees, **Sometimes:** 3 degrees, **Rarely:** 2 degrees, **Never:** 1 degree.

The equation below was used to determine the range of each level:

$$\frac{\text{Higher category} - \text{Lower category}}{\text{Number of levels}} = \text{Class length}$$

In the case with three levels, the class length is calculated as:

$$\frac{5 - 1}{3} = \frac{4}{3} = 1.33$$

Hence:

- 1- 2.33 (low level),
- 2.34 - 3.67 (medium level),
- 3.68-5 (high level).

3.7. Study Variables

In order to assess the effect of occupational health and safety on total quality management in the Jordanian industrial mining sector, the following factors were used:

1. Total quality management: Support for senior management, continuous improvement, focus on the customer, empowering employees, strategic planning for quality.

2. Occupational health and safety:

To answer the study questions and test its hypotheses, the Statistical Package for Social Sciences (SPSS) is used as follows:

First: Descriptive statistic measures: For the purpose of describing the characteristics of the demographic and functional sample of the study sample, which include:

- Percentages: to measure the relative frequency distributions of the characteristics of the sample members.
- Arithmetic mean: to measure the average answers of the respondents on the items of the questionnaire.
- Deviation: to measure the extent to which the answers are scattered from their arithmetic mean.
- Relative importance: it is determined when commenting on the arithmetic averages according to an approved formula, and according to the five-point “Likert scale” for answer alternatives for each paragraph, which were determined according to the scale presented in Section 3.6.

Consequently, the relative importance is classified as follows:

- Low relative importance, if the arithmetic mean is from 1 to 2.33,
- Medium relative importance, if the arithmetic mean is from 2.34 to 3.67,
- High relative importance, if the arithmetic mean is from 3.68 to 5.

Second: Analytical statistics: the data collected through the questionnaire (the study tool) will be processed using the statistical program for social sciences (SPSS) and included the following statistical methods:

- Stability coefficient: Cronbach’s alpha test is used to identify the stability of the study scales by measuring the degree of internal consistency between the items of the questionnaire.
- Multicollinearity test: to determine the suitability of the study data for multiple regression analysis, and to verify that the data is free from the problem of near-perfect linear correlation between two or more variables, where Pearson correlation coefficient was used to find the extent of the autocorrelation between the dimensions

of each variable of the study, the variance inflation factor was also tested. Factor (VIF) to make sure there is no high correlation and linear overlap between the dimensions of the independent variable.

- Autocorrelation test: to determine the suitability of the study data for multiple regression analysis, and to verify that the data is free from the problem of autocorrelation in the regression model, and this was confirmed using the Durbin-Watson regression test to demonstrate the model's predictive ability.

- Test one-sample Kolmogorov-Smirnov test: to test the normal distribution of data for study variables.

- Simple regression: to verify the existence of the effect between two variables, one independent and the other dependent, as it will be used in the current study to verify the effect of the independent variable on the mediating variable.

- Multiple regression: to determine whether the dependent variable's dimensions are affected by the independent variable's dimensions.

- Path analysis: Amos 21 is used to build the proposed model for the study, to find the effect of the independent variable on the dependent variable through the presence of the mediating variable. Hence, the indirect effect of the mediating variable is shown.

4. IMPLEMENTATION AND RESULTS

This chapter deals with a presentation of the findings of the study, which aimed to identify the impact of occupational health and safety on total quality management in the Jordanian industrial mining sector, and the following is a presentation of the results of the study.

The results related to the first question: What is the level of relative importance of the study variables (occupational health and safety, total quality management) in the Jordanian industrial mining industry?

To answer this question, the researcher extracted the arithmetic mean, standard deviation, and the percentage of estimates of the study sample members about the effect of health and safety on overall quality, Table 6 shows the results of averages, standard deviations and percentages of the study members' point of view about (health and safety in workplace) in the Jordanian industrial mining industry.

Table 6. Results from an individual's perspective on OHS in the mining sector

N	Paragraph	Average	Standard Deviation	Percentage
1	The department trains staff for emergency situations.	4.03	0.620	80.6
2	The department works to ensure that all health conditions are met in order to keep workers safe.	3.30	1.27	66.0
3	The department investigates all accidents to which employees are exposed and works to resolve them.	4.38	0.710	87.6
4	The department measures and evaluates the working environment.	3.40	0.990	68.0

5	The department investigates the causes of workers' poor performance and productivity.	4.27	0.680	85.4
6	Employees are aware of safety and security standards to avoid accidents.	3.16	0.99	63.2
7	When an accident occurs, the department works to ensure that its employees have the necessary insurance.	4.00	0.82	80.0
8	The department strives to implement appropriate procedures to reduce workplace accidents.	4.02	0.77	80.4
9	The department disregards workplace safety and security standards.	4.29	0.81	85.8
10	The department strives to conduct regular checks on its employees.	4.10	0.84	82.0
11	There is a special effective system with health and safety professionals within the department.	4.08	0.68	81.6
12	Within the department, there are specialized control bodies that supervise business safety and occupational health.	3.90	0.71	87.0

13	Within the health and safety authorities, there is a professional and qualified trainer in this field.	3.32	1.08	66.4
14	The department has policies and strategies in place to reduce workplace accidents.	4.37	0.60	87.4
15	In the workplace, there are safety advertisements and posters with a health and safety specialist.	4.13	0.68	82.6
16	Occupational Health and Safety Administration employees are encouraged to participate in decisions that affect their safety.	3.40	0.95	68.0
17	The workers are at blame for the majority of work-related injuries.	4.17	0.68	83.4
18	Impose deterrent administrative occupational health and safety penalties on the worker who is not committed to using protective measures during work.	4.03	0.68	80.6
19	The worker should have confidence in the management capabilities in dealing with health and safety issues in the department.	4.17	0.70	83.4
20	There exist work committees specialized in occupational health and safety working to develop occupational safety.	3.62	0.93	72.4

21	There are competencies and expertise in senior management capable of developing occupational health and safety management systems.	4.03	0.620	77.5
22	There are first aid boxes available for use at work.	3.30	1.27	80.6
23	Supervisors must remain vigilant while doing occupational health and safety matters at work	4.38	0.710	66.0
24	Workplace accidents are reduced by developing regulations and laws in collaboration with health and safety professionals.	3.40	0.990	87.6
25	The company's schedule has improved in terms of adherence to rules and legislation governing workplace health and safety.	4.27	0.680	68.0

It is clear from the above table that there is an apparent and real difference in the averages and deviations, and that the percentages were significantly high, which indicates that there is a real circumvention around the importance of occupational health and safety by workers in mining companies, as this importance comes through the role played by health and safety professionalism by providing encouraging and motivating working conditions for employees.

According to this logic, that it is a humanitarian duty and an unavoidable responsibility to protect workers and provide a safe and sound working environment in institutions by raising preventive awareness among them, educating them about common workplace mistakes, teaching them how to use devices to reduce the risk of

injuries, and teaching them the proper work methods to do so while preserving workers, machines, and equipment.

As a result, laws and legislations were passed, and numerous local and international conferences were held with the goal of protecting people at work. One such conference was the Occupational Health and Safety Convention (No.155) of 1981, which aims to prevent accidents and illnesses brought on by work and lower the risks involved. The Jordanian Labor Law (No. 7) of 2000 in addition to the workplace environment. To make it possible for businesses and institutions to fulfill their missions and fulfill their roles, In order to prevent workplace hazards, achieve the highest level of occupational health, and reduce the number of material and human losses, it is required to implement safety processes in these businesses, create a work environment free of dangers, and educate personnel with safety standards.

In order to provide safe and healthy work environment, besides preventing accidents and occupational diseases, making the human and material elements to work together is essential. Moreover, the possible damage and loss of production elements must be eliminated. Consequently, costs will decrease, and production efficiency will increase.

The protection of people from harm at work is one of the most crucial concerns and challenges that professionals and employers face on a daily basis. Additionally, because of the growth and spread of industry in this century, as well as the risks that come with it, and the need to protect property from harm, protecting people from harm at work also means protecting the national economy and society, Table 7 shows the results about averages, standard deviations and percentages of the study members' point of view on (health and safety, quality management) in the Jordanian industrial mining industry.

Table 7. Results for the study members about OHS and QC in mining sector

N	Field 1: Senior Management Support	Average	Standard Deviation	Percentage
1	Senior management commitment to quality on a daily basis for operations within the company.	3.77	0.87	75.4
2	Determine the objectives of senior management to be clear for quality.	3.75	0.89	75.0
3	Top management provides the necessary resources (such as funds, personnel and training) to carry out management with an overall quality.	3.77	0.79	75.4
4	Individuals in senior management serve as coaches and mentors to employees at various operations.	3.77	0.83	75.4
5	The performance of senior management is linked to the objectives associated with quality performance.	3.75	0.85	75.0
6	Setting quality goals in the company through senior management, central management and administrative executives.	3.81	0.83	76.2
7	Senior management has an organizational culture that emphasizes the quality of	2.73	1.12	54.6

	production as everyone's responsibility.			
8	Senior management engages suppliers in the total quality management process.	2.34	1.13	46.8
9	The administration encourages work groups to collaborate without competing with each other.	2.70	1.00	54.0
10	Review the management system at regular intervals to assess its continued suitability, adequacy, and effectiveness.	2.95	1.21	59.0
N	Field 2: Continuous Improvement	Average	Standard Deviation	Percentage
1	The department is eager to improve the operational efficiency of its operations.	4.12	0.72	82.4
2	At work, new methods are used in the design of processes and special procedures.	4.18	0.77	83.6
3	The department is working to improve search results for a variety of functional activities.	4.28	0.55	85.6
4	The department is distinguished by the speed with which it handles employee complaints and suggestions.	4.14	0.73	82.8

5	The department helps to provide moral support to employees so that they can perform at their best.	4.02	0.93	80.4
6	The department is concerned with the clarity of its employees' tasks and roles.	4.22	0.72	84.4
7	The department provides a clear system of control over the various works.	4.05	0.84	81.0
8	The department develops a variety of functional activities.	3.88	1.02	77.6
9	The department examines the needs and expectations of the clients.	4.26	0.69	85.2
10	The department is keen on job development to achieve its strategic goals.	3.89	1.02	77.8
N	Field 3: Focus on the Customer	Average	Standard Deviation	Percentage
1	The department strives to listen to customers and meet their expectations.	4.02	0.78	80.4
2	For the department, the customer is the most important element it has.	3.83	0.96	76.6

3	The department provides incentives to customers to encourage them to use services.	3.66	1.04	73.2
4	The department is concerned with the quality of its services and meeting the expectations of its customers.	3.92	0.71	78.4
5	The department monitors and responds to private complaints from customers about services and products.	3.95	0.82	79.0
6	The department's relationship with customers is one of understanding and friendship founded on mutual trust.	3.71	0.84	74.2
7	Customers' needs and aspirations are prioritized by the department.	3.92	0.89	78.4
8	The department is in charge of replacing and changing products that are no longer meeting the needs of customers.	4.00	0.69	80.0
9	The department works on the necessary improvements, from the process to better delivery of goods and services to the customer.	4.00	0.71	80.0
10	The department is working hard to deliver products that meet or exceed their expectations.	3.85	0.76	77.0

N	Field 4: Empowering Workers	Average	Standard Deviation	Percentage
1	The department encourages debate, and accepts differences in opinions.	4.05	0.72	81.0
2	The working environment is pleasant.	3.57	1.02	74.4
3	Employees get along well with supervisors.	3.88	0.77	77.6
4	Encourages colleagues to collaborate.	3.61	0.90	72.2
5	The department provides modern capabilities to perform the job well.	3.73	0.76	74.6
6	The performance evaluation standards currently in use are effective.	3.64	0.80	72.8
7	There are effective communication channels between departments and their members, between departments, and between administration departments.	3.91	0.66	78.2
8	Encourages employees to offer constructive feedbacks.	3.48	0.94	69.6
9	The department's decisions are characterized objectively.	3.83	0.70	76.6

10	Administrative issues and problems within the department are handled in a timely and efficient manner.	3.70	0.77	74.0
N	Field 5: Strategic Planning for Quality	Average	Standard Deviation	Percentage
1	Employees in the department are directed toward strategic planning.	3.95	0.92	79.0
2	The department works to provide enough budget to implement the plan in advance.	4.09	0.71	81.8
3	The implementation of strategic plans is continuously discussed with the officials.	3.37	1.14	67.4
4	The departments sets performance standards to measure each component of the plan.	3.88	1.05	77.6
5	The department works to open communication channels in all directions.	4.02	0.99	80.4
6	The department works to provide organized information sufficient to follow the plan's implementation.	4.37	0.80	87.4

7	The department works to provide adequate human resources to implement the plan.	4.52	0.59	90.4
8	The department evaluates the external regulatory environment and improves its requirements.	4.63	0.60	92.6
9	The department reviews the strategic budget plan.	4.43	0.75	88.6
10	The department knows its employees through strategic planning legislation.	4.62	0.55	92.4

It is clear from the above table that there is a clear and real difference in the averages and deviations, and that the percentages were significantly high, which indicates the existence of a real wrap around the total quality by workers in the mining companies.

Developing goods and services in accordance with consumer demand is how industrial companies aim to reach high and advanced levels. The time it takes to perform and complete jobs as well as the amount of monitoring work grow as a result of a lack of focus on quality, which also increases customer complaints. The institution's policies and procedures for providing services to clients frequently place a strong emphasis on keeping track of the goals and making sure they are met. As a result, the client suffers because these processes are frequently drawn-out and stiff. Getting activities done for clients faster is one of the primary comprehensive quality goals, and it does require doing things correctly the first time, which entails repairing or replacing damaged items in order to cut expenditures.

In order for a product to fulfill the intended purpose of quality and satisfy anticipated consumer needs, it must have a certain set of features and traits.

Additionally, comprehensive quality appears to satisfy customer needs by carrying out the proper actions in the proper manner from the outset thanks to

performance leadership. Simultaneously, and it symbolizes the integrated business management philosophy that does not separate customer needs from business objectives. It also symbolizes the philosophy of increasing the profitability of the company through continuous improvement of all aspects of the functions included in management.

Organizations tend to adopt the philosophy of total quality management because it is a comprehensive, planned and continuous way to achieve its goals and enhance its capabilities in facing the requirements of development and change factors. Excellence in performance, which takes care in addition to fully responding to customer demands; on innovation, creativity and consideration for the workplace in a framework designed to enhance the overall effectiveness of the business.

The philosophy of quality management is based on paying attention to preventive measures that prevent errors from occurring instead of corrective actions that address errors after they occur, so that work is performed in any of the operations correctly and from the first time.

The researcher believes that the result shows clear differences in the results of the study sample members, and therefore he worked to find a coefficient of linear correlation for each of the impact of health and safety in workplace on all the branches of total quality.

First: The impact of health and safety on supporting senior management

Table 8 shows the results about multiple regression test results to determine the effect of health and safety on senior management support.

Table 8. The impact of health and safety on senior management support

R	R ²	F-value	Significance level F	T-value	Significance level T
0.404	0.163	50.078	0.000	7.077	0.000

It can be seen from the previous table that the significance level F is 0.00, which is less than the significance level 0.05, while the significance level T is found as 0.000, which is a value less than the significance level 0.05, and this indicates that the value of (F, T) is a statistical and constructive function. Hence, there is an effect of health and safety on senior management support.

Second: The effect the health and safety on continuous improvement

Table 9 shows the results about multiple regression test results to determine the effect the health and safety on continuous improvement.

Table 9. The impact of health and safety on continuous improvement

R	R ²	F-value	Significance level F	T-value	Significance level T
0.497	0.247	84.205	0.000	9.176	0.000

It can be seen from the previous table that the significance level F is 0.00, which is less than the significance level 0.05, while the significance level T is found as 0.000, which is a value less than the significance level 0.05, and this indicates that the value of (F, T) is a statistical and constructive function. It can be concluded that, there is an effect of health and safety on continuous improvement.

Third: The effect the health and safety on customer focus

Table 10 shows the results about multiple regression test results to determine the effect the health and safety on concentration on the customer.

Table 10. The impact of health and safety on customer focus

R	R ²	F-value	Significance level F	T-value	Significance level T
0.196	0.038	10.247	0.002	3.201	0.002

It can be seen from the previous table that the significance level F is 0.002, which is less than the significance level 0.05, while the significance level T is found as 0.002, which is a value less than the significance level 0.05, and this indicates that the value of (F, T) is a statistical and constructive function. Hence, there is an effect of health and safety on customer focus.

Fourth: The effect the health and safety on employee empowerment

Table 11 shows the results about multiple regression test results to determine the effect the health and safety on employee empowerment.

Table 11. The effects of health and safety on employee empowerment

R	R ²	F-value	Significance level F	T-value	Significance level T
0.399	0.159	40.670	0.000	6.976	0.000

It can be seen from the previous table that the significance level F is 0.00, which is less than the significance level 0.05, while the significance level T is found as 0.000, which is a value less than the significance level 0.05, and this indicates that the value of (F,T) is a statistical and constructive function. It can be concluded that, there is an effect of health and safety on employee empowerment.

Fifth: The effect of health and safety on strategic planning for quality

Table 12 shows the results about multiple regression test results to determine the effect the health and safety on strategic planning for quality.

Table 12. The impact of health and safety on strategic planning for quality

R	R ²	F-value	Significance level F	T-value	Significance level T
0.404	0.163	50.078	0.000	7.077	0.000

It can be seen from Table 12 that the significance level F is 0.00, which is less than the significance level 0.05, while the significance level T is found as 0.000, which is a value less than the significance level 0.05, and this indicates that the value of (F, T) is a statistical and constructive function. Thus, there is an effect of health and safety on strategic planning for quality.

The results related to the second question: What effect does workplace health and safety have on overall quality management in the mining sector in Jordan?

Table 13 shows the results about Pearson's correlation coefficient about the effect of health and safety on quality.

Table 13. The impact of health and safety on quality

The Level	Scale Statistics	Occupational Health and Safety Level
Senior management support	Pearson correlation coefficient	0.892 **
	Significance level	0.000
Continuous improvement	Pearson correlation coefficient	0.858 **
	Significance level	0.000
Focus on the customer	Pearson correlation coefficient	0.875 **
	Significance level	0.000
Empowering workers	Pearson correlation coefficient	0.904 **
	Significance level	0.000
Total marks	Pearson correlation coefficient	0.882 **
	Significance level	0.000

** Significance level ($\alpha= 0.05$).

Table 13 shows that there is a statistically significant relationship between all areas of total quality and occupational health and safety among workers in mining companies, as the correlation coefficient between them reached 0.882. While the correlation coefficient between the level of occupational health and safety, and focus on the customer is 0.875, the coefficient with continuous improvement is 0.858. The highest coefficient, which belongs to employee empowerment has a value of 0.904, followed by 0.892 for the senior management support.

In general, the researcher sees that these principles are included in the different models for managing excellence, and in particular each of: the European model and its American counterpart; that is the management of excellence and the management of comprehensive quality are closely related, which is evident from looking at the

requirements for the application of total quality management, which are represented in nine requirements: the support and endorsement of the senior management of its application, the development of the institution's culture and working environment, focus on the customer, performance measurement, and management effective human resources, continuous education and training, and leadership capable of applying total quality management, establishing an information system for it, and forming quality work teams.

The beginning of companies' endeavor to implement total quality management and to plan for it strategically begins with a strategic decision, focusing on quality and the company's mission to achieve it to the highest degree because it is the most efficient means through which the company can compete, and thus there are multiple stages of strategic planning for quality, which are called these stages (quality engineering the stages of developing a strategic plan for total quality management are as follows.

All of the work and efforts are directed toward making the necessary improvements so that customers can receive better goods and services, especially given that customers today are less tolerant of subpar quality and service and are willing to change their attitudes toward organizations that offer better services and higher quality. This means that these businesses must be aware that their outputs are satisfactory from the perspective of the client.

The ultimate goal of total quality management must be perfection, which cannot be attained easy, and this demands nonstop improvement of the products, services, and performance. The Japanese term Kaizen was adopted to characterize the continual, incremental improvement process. This endeavor has been praised for having no defects in the US. As a result, in order to consistently deliver the best, the organization's policy, organizational design, and operational procedures must be founded on motivating and facilitating processes for growth and development. Therefore, everyone who works for the company, regardless of their position or level within the organization, is accountable for the process of improvement and development.

5. CONCLUSION AND RECOMMENDATIONS

This chapter includes a discussion of the results that the researcher has reached, and some recommendations for the related topic.

The findings demonstrated that overall quality management is impacted by occupational health and safety, and that they intersect to achieve the working interest and the quality of production and the clear results that are reflected in the workflow of the operational institutions and organizations.

Business companies always strive to create, enhance, and alter their strategy, develop new products, and employ sustainable techniques and methods in order to achieve success, maintain success, and survive. The management of the modern company aims to gain from the knowledge and sciences that scientists and knowledge circles continually generate, and these efforts result in the creation of new opportunities as well as advancement and ongoing development.

It can be said that the era in which we live is witnessing many rapid developments in all areas of economic, social, knowledge, cultural or political life. Researchers and those interested in the field of organization realize that it is not possible to talk about an effective organization without paying attention to the human element as one of the important elements in every successful organization.

The researcher believes that the ability to achieve excellence in operational institutions and organizations and their employees in a constructive manner is one of the important features that a successful manager must characterize.

It is known that accidents increase in the industrial establishment and the mining sectors, due to several things represented in the presence of conditions that differ from the conditions of the normal lifestyle in terms of temperature and humidity, air pollution, the presence of sharp machines, pistons and compressors, and the use of many dangerous materials such as caustic burners, which causes many from occupational diseases, not to mention the possibility of electric shocks to individuals, and fires, resulting in risks that may affect the worker, his family, and society in general.

The industrial mining sector in Jordan stands on the threshold of increasing its products in the local markets, in light of the frantic competition imposed on it by

foreign goods, and presenting it as an authentic national alternative to the various goods that it promotes within the Jordanian market. The industrial mining sector in Jordan represents 11.2% of the size of Jordanian industries, as stated by the Jordanian Ministry of Labor.

The environment in which modern companies operate is one marked by profound and extensive changes and advancements, particularly in the cognitive, technical, administrative, and information areas. The association between organizational change and various aspects of the organization should be aligned so as to reach the goal for operating in a better way.

For many businesses, change is a vital and ongoing process. The movement of these organizations pauses without the process of change and development, while the environment as a whole quickly moves in the other direction. The sudden changes that occur under certain social, economic, or political conditions are not what meant by organizational change in this context; rather, it refers to work that has been planned in advance on the basis of scientific knowledge in accordance with the capabilities available to the organization within the confines of its established goals. Change is therefore not seen as an end in and of itself, but rather as a means to the best outcomes.

It can be said that organizations always seek to maintain their balance and coexist with their environment as much as possible, but as they advance, they could run into difficulties that force them to make adjustments to their routines, structures, or even activities. Therefore, businesses must constantly work to comprehend the environment and the changes occurring in them and try to find strategies to adapt to them in order to ensure their existence. Understanding, perceiving, creating, and adapting to change are the key concepts of contemporary management theory. Since change is now viewed as the key to an organization's success and competitive advantage, the main responsibility of management today is to employ reason and scientific prediction rather than chaos.

Maintaining three of the fundamental components of production humans, materials, and an atmosphere of safety and tranquility by creating a safe and healthy work environment that safeguards against accidents and occupational diseases and preserves the three basic components of production, and at the same time preserving

other production elements from the possibility of damage and loss, thus reducing their costs and raising their production efficiency.

Health and safety in workplace, which refers to maintaining and protecting workers from injuries brought on by work accidents as well as occupational health, have received a lot of attention from the human resources department in order to protect the workforce from the detrimental effects of work accidents and injuries.

Industrial organizations seek to achieve high and advanced levels, by creating goods and services that reflect what the market wants. The time it takes to perform and complete jobs as well as the amount of monitoring work grow as a result of a lack of focus on quality, which also increases customer complaints. The institution's policies and procedures for providing services to clients frequently place a strong emphasis on keeping track of the goals and making sure they are met. The client is negatively impacted by these procedures because they are frequently rigid and drawn out. Consequently, reducing the time needed to complete tasks for the client is one of the primary comprehensive quality objectives, it also necessitates doing things correctly the first time, which entails repairing or replacing damaged items less frequently to keep expenses down.

Quality has become one of the most important values of management in the modern world. In order for a product to fulfill the intended purpose and satisfy anticipated consumer needs, it must have a certain set of features and traits.

This entry is considered an essential complement to the two entrances to strategic planning and organizational development, and a basic means to achieve excellence in performance. To be achieved in light of the openness of markets, and this is provided by total quality management. It is a management philosophy that aims to bring about a comprehensive and continuous development for all stages and aspects of performance, to carry out continuous improvement of the various operations of the facility and the optimal use of resources, in order to achieve customer satisfaction.

Organizations tend to adopt the philosophy of total quality management as it is a comprehensive, planned and continuous way to achieve their goals and enhance their capabilities in facing the requirements of development and change factors. Excellence in performance, which takes care in addition to fully responding to customer demands,

on innovation, creativity and concern for the work environment in a framework, aims at improving the overall performance of the organizations.

After arriving to findings demonstrating the influence of workplace health and safety on overall quality, the researcher recommends the following:

- Establishing a department to monitor occupational health and safety in organizations and to develop them continuously.
- Establishing health and safety standards within the organization and forcing employees to comply with them.
- Adopting total quality management as a measure of work so that its technical specifications are reflected on the consumer.
- Setting clear standards for product quality and demonstrate them openly to the consumer.

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APPENDIX A – STUDYING SCALE

The researcher has referred to previous studies related with total quality management, and the following scale was developed.

The scale includes two main parts:

Part One: Total Quality Management

This part includes five basic axes to measure total quality management for workers in the Jordanian mining sector, which are as follows:

- Senior management support: Includes 10 paragraphs.
- Continuous improvement: Includes 10 paragraphs.
- Focus on the customer: Includes 10 paragraphs.
- Empowering workers: Includes 10 paragraphs.
- Strategic planning for quality: Includes 10 paragraphs.

Part Two: Occupational Health and Safety

This part includes paragraphs devoted to measuring the occupational health and safety axis (the modified role) , as it featured 25 items to gauge the outcome desired.

Personal and Job Characteristics

Please put a tick (✓) in front of the appropriate answer :

1- Gender

☐ Female

☐ Male

2- Age

☐ 20-30 years

☐ 30-40 years

☐ 40-50 years

☐ 50-60 years

3- Qualification

☐ Bachelor's

☐ College diploma or less

☐ PhD

☐ Master's

4- Years of Experience

☐ Less than 5 years

☐ 5-10 years

☐ 10-15 years

☐ 15-20 years

☐ 20-25 years

☐ More than 25 years

Part One: Total Quality Management

N	Field 1: Senior Management Support	Relevance	Not Applicable	Notes
1	Senior management commitment to quality on a daily basis for operations within the company.			
2	Determine the objectives of senior management to be clear for quality.			
3	Top management provides the necessary resources (such as funds, personnel and training) to carry out management with an overall quality.			
4	Individuals in senior management serve as coaches and mentors to employees at various operations.			
5	The performance of senior management is linked to the objectives associated with quality performance.			
6	Setting quality goals in the company through senior management, central management and administrative executives.			
7	Senior management has an organizational culture that emphasizes the quality of			

	production as everyone's responsibility.			
8	Senior management engages suppliers in the total quality management process.			
9	The administration encourages work groups to collaborate without competing with each other.			
10	Review the management system at regular intervals to assess its continued suitability, adequacy, and effectiveness.			
N	Field 2: Continuous Improvement	Relevance	Not Applicable	Notes
1	The department is eager to improve the operational efficiency of its operations.			
2	At work, new methods are used in the design of processes and special procedures.			
3	The department is working to improve search results for a variety of functional activities.			
4	The department is distinguished by the speed with which it handles employee complaints and suggestions.			

5	The department helps to provide moral support to employees so that they can perform at their best.			
6	The department is concerned with the clarity of its employees' tasks and roles.			
7	The department provides a clear system of control over the various works.			
8	The department develops a variety of functional activities.			
9	The department examines the needs and expectations of the clients.			
10	The department is keen on job development to achieve its strategic goals.			
N	Field 3: Focus on the Customer	Relevance	Not Applicable	Notes
1	The department strives to listen to customers and meet their expectations.			
2	For the department, the customer is the most important element it has.			

3	The department provides incentives to customers to encourage them to use services.			
4	The department is concerned with the quality of its services and meeting the expectations of its customers.			
5	The department monitors and responds to private complaints from customers about services and products.			
6	The department's relationship with customers is one of understanding and friendship founded on mutual trust.			
7	Customers' needs and aspirations are prioritized by the department.			
8	The department is in charge of replacing and changing products that are no longer meeting the needs of customers.			
9	The department works on the necessary improvements, from the process to better delivery of goods and services to the customer.			
10	The department is working hard to deliver products that meet or exceed their expectations.			

N	Field 4: Empowering Workers	Relevance	Not Applicable	Notes
1	The department encourages debate, and accepts differences in opinions.			
2	The working environment is pleasant.			
3	Employees get along well with supervisors.			
4	Encourages colleagues to collaborate.			
5	The department provides modern capabilities to perform the job well.			
6	The performance evaluation standards currently in use are effective.			
7	There are effective communication channels between departments and their members, between departments, and between administration departments.			
8	Encourages employees to offer constructive feedbacks.			
9	The department's decisions are characterized objectively.			

10	Administrative issues and problems within the department are handled in a timely and efficient manner.			
N	Field 5: Strategic Planning for Quality	Relevance	Not Applicable	Notes
1	Employees in the department are directed toward strategic planning.			
2	The department works to provide enough budget to implement the plan in advance.			
3	The implementation of strategic plans is continuously discussed with the officials.			
4	The departments set performance standards to measure each component of the plan.			
5	The department works to open communication channels in all directions.			
6	The department works to provide organized information sufficient to follow the plan's implementation.			
7	The department works to provide adequate human resources to implement the plan.			

8	The department evaluates the external regulatory environment and improves its requirements.			
9	The department reviews the strategic budget plan.			
10	The department knows its employees through strategic planning legislation.			

Part Two: Occupational Health and Safety

N	Paragraph	Relevance	Not Applicable	Notes
1	The department trains staff for emergency situations.			
2	The department works to ensure that all health conditions are met in order to keep workers safe.			
3	The department investigates all accidents to which employees are exposed and works to resolve them.			
4	The department measures and evaluates the working environment.			
5	The department investigates the causes of workers' poor performance and productivity.			
6	Employees are aware of safety and security standards to avoid accidents.			
7	When an accident occurs, the department works to ensure that its employees have the necessary insurance.			
8	The department strives to implement appropriate procedures to reduce workplace accidents.			

9	The department disregards workplace safety and security standards.			
10	The department strives to conduct regular checks on its employees.			
11	There is a special effective system with health and safety professionals within the department.			
12	Within the department, there are specialized control bodies that supervise business safety and occupational health.			
13	Within the health and safety authorities, there is a professional and qualified trainer in this field.			
14	The department has policies and strategies in place to reduce workplace accidents.			
15	In the workplace, there are safety advertisements and posters with a health and safety specialist.			
16	Occupational Health and Safety Administration employees are encouraged to participate in decisions that affect their safety.			
17	The workers are at blame for the majority of work-related injuries.			

18	Impose deterrent administrative occupational health and safety penalties on the worker who is not committed to using protective measures during work.			
19	The worker should have confidence in the management capabilities in dealing with health and safety issues in the department.			
20	There exist work committees specialized in occupational health and safety working to develop occupational safety.			
21	There are competencies and expertise in senior management capable of developing occupational health and safety management systems.			
22	There are first aid boxes available for use at work.			
23	Supervisors must remain vigilant while doing occupational health and safety matters at work			
24	Workplace accidents are reduced by developing regulations and laws in collaboration with health and safety professionals.			

25	The company's schedule has improved in terms of adherence to rules and legislation governing workplace health and safety.			
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Based on the instructions of the scale, which show the respondent (workers) and how to respond, the respondent must choose the answer that is appropriate by placing a sign (X) that agrees with his feelings, attitudes and behavior in situations related to him , and placing a sign (X) in the appropriate place in front of it. The table below shows the distribution and correction of the responses.

Distribution and correction of the answer scale on the paragraphs of the scale:

Never	Rarely	Sometimes	Mostly	Always
1	2	3	4	5

In order to correct the answers on the scale, five categories were identified for the answers for each paragraph, and they are corrected according to the following notation:

Always: 5 degrees, **Mostly:** 4 degrees, **Sometimes:** 3 degrees, **Rarely:** 2 degrees, **Never:** 1 degree.

The following equation was used to determine the range of each level:

$$\frac{\text{Higher category} - \text{Lower category}}{\text{Number of levels}} = \text{Class length}$$

In the case with three levels, the class length is calculated as:

$$\frac{5 - 1}{3} = \frac{4}{3} = 1.33$$

Hence:

- 1- 2.33 (low level),
- 2.34 - 3.67 (medium level),
- 3.68-5 (high level).