STUDY THE QUALITY MANAGEMENT AND CONTROL SYSTEMS FOR BOTTLED DRINKING WATER FACTORIES IN BENGHAZI, LIBYA

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ABSTRACT

The study included an evaluation of quality management and control systems in drinking water bottling factories in Benghazi Libya, where the evaluation adopted a field study using a pre-prepared questionnaire with some modification. After collecting and analyzing the data, the evaluation concluded that most factories have a quality management system and operate with special systems, and most of them are administratively independent, and this indicates the companies and factories' awareness of the effective role of quality management, which is part of the public administration.The evaluation also showed the quality management's dependence on systems and regulations in implementing its work, which is positively reflected on achieving the goals in a scientific, coordinated, studied and highly profitable manner, while helping to reduce losses and errors. The evaluation also showed the existence of laboratories that conduct analyzes in factories and rely in a small part of the tests and analyzes on public sector laboratories with the application of internationally approved and documented examination methods linked to the standard specifications that are followed and commitment to their application, and this is a major reason for obtaining certificates of conformity for its products for manufacturing and circulation.the evaluation also showed a strong and moral link of quality management with regulations, regulations, application of specifications, laboratories, and technical procedures. The evaluation also showed the recruitment of competencies to carry out the functional tasks of quality management in a distinguished scientific manner, where the workforce was specialized and trained and had knowledge of modern systems, and this reflects the vision of many.

Keywords: Quality Management, Locally Bottled Drinking Water, Specifications

1. INTRODUCTION

The world is witnessing great interest in quality management and in providing the requirements and specifications that make quality at its highest levels. The concept of quality has become one of the main pillars for the success of work in production and service organizations, because of the intensity of competition and the emergence of trade-offs between products and quality. in its general sense is the organization's production of a commodity and the provision of a service with requirements and characteristics through which it is able to fulfill the needs and desires of its customers in a manner consistent with their expectations and to achieve their satisfaction and happiness. To embody this concept, economic organizations have relied on adopting modern methods, perhaps the most common and applied in the world, the quality management method, which over the past two decades has achieved impressive successes in many American, Japanese, European and Arab companies. Which made it a distinctive feature of the data of modern human thought and one of the most important manifestations in the business sector.[1,2]

The most important responsibilities of quality management in food industrial establishments can be summarized as follows: Supervising the follow-up of the application of standard specifications for all production inputs and for the final product, with continuous re-evaluation and making the necessary adjustments if necessary. Monitoring health conditions in the establishment, including the work environment and workers, and supervising waste disposal operations to ensure the safety of the environment. Preparing training programs for workers in the field of quality management and participating in preparing training programs for the rest of the workers. Participate in the preparation of research projects and in drawing up the budget, pricing and inventory policy Preparing appropriate statistical methods and methods for use in processing data obtained from various production lines [3]

As the history and development of quality spread at the beginning of the eighties of the last century AD 7808 AD, therefore, the manufacturing process all over the world witnessed a real revolution. This revolution was centered on the conviction of industry owners to satisfy consumers to preserve them, and it is the key to returning sales opportunities, so companies worked diligently to improve the quality of products and the quality of manufacturing processes with Trying to reduce production costs and all this falls within the framework of customer satisfaction constantly and at any time.

The concept of quality control has evolved and the attention is no longer focused on the quality of the final product only, but has expanded to include quality since the beginning of production, manufacturing and trading to the concept of comprehensive quality control, which it follows Factory managements that many factory units participate in it, starting from raw materials, marketing, design, research, production, purchasing and analysis lab,

and then refer again to the opinions of consumers. Some companies have chosen (total quality) to improve quality, while others have opted for Companies tend to adopt (modern quality systems) or international quality specifications and standards, such as the ISO 9000 series or Good Manufacturing Practice (GMP) or control by analyzing hazard sources at critical points. (HACCP) or even work under a local umbrella.[4]

The World Health Organization (WHO) has developed a guide to drinking water quality to define standards according to the environmental, social, and cultural conditions prevailing in the community. This guide, which is updated every ten years, is prepared by the United Nations Environment Program (UNED), the International Labor Organization (LO7) and the World Health Organization (WHO) under the auspices of the International Program on Chemical Safety (IPCS). The aim of this guide is to assess the impact of chemicals on Human health and environmental conditions, with an estimate of the acceptable daily exposure limits and the maximum allowable limits for water, air, food, and the work environment for various chemicals including food additives, industrial chemicals, toxic natural materials, plastics, and pesticides.[5]

Characteristics that meet specific needs:

Comprehensive quality control is also a term that describes the comprehensive control of raw materials, workers, and machines, in addition to technical management, such as storage, transportation, marketing, and all associated activities, such as product specifications and design according to specifications, production according to specifications, examination to determine compliance with specifications, and information review to ensure the correctness of specifications. This monitoring provides assurance of product continuity, better service to the customer or consumer, reducing cost, raising product quality, and maintaining (keeping) its quality. It includes marketing - production - purchasing - inspection - after-sales service. In general, there are several definitions of quality.[6]

Objectives of the study:

Study of quality management and control systems in bottled drinking water factories in the city of Benghazi.

2.   MATERIALS AND METHODS

Cross sectional study focused on the city of Benghazi overlooking the Mediterranean Sea in the northeastern part of Libya, whose administrative borders start from the Sidi Khalifa area to the Al-Halis area with an area of 89,191 km. In the juice industry and bottled drinking water such as Al Ain Water and Juice Bottling Company, Hasnaa Water Bottling Company, Al Reem Bottling Water and Juices Bottling Al Aseel Water and Juices Bottling, Shahd Water and Juices Bottling, Pure Water and Juices Bottling, Fountain Water Bottling, Shahd Water Factory, Kunooz Drinking Factory, and Aren Company for bottling drinking water and juices.

The duration of the study was from the point of view of evaluating quality management and control systems for local drinking water bottling factories, where the field study was conducted during the year of 2020-2021 that we conducted, and which was based on the distribution and collection of questionnaire papers, observations, and field visits to the factories.

A data collection form issued by the Arab Organization for Agricultural Development questionnaire (7) was used, with some changes, which included 13 axes for assessing quality management in drinking water bottling factories for the purpose of studying quality management and control systems in bottled drinking water factories in the city of Benghazi. 14 companies and factories were targeted to fill the drinking water with a total of 180 questionnaire sheets, Table (1).

Table (1): A statement of the number of distributed copies of the questionnaire form and the companies and factories participating in the study

N. O	Questionnaire recipients	Number of copies
1	Al Ain Company for Bottling Drinking Water and Soft Drinks	24
2	Al Aseel Company for Bottling Drinking Water and Soft Drinks	16
3	Al Reem Company for bottling drinking water and soft drinks	16
4	Al Nafoura Company for Bottling Drinking Water and Juices Shareholding	14
5	Pure Company for bottling drinking water and soft drinks	18
6	Aren Drinking Water Bottling Company	10
7	Al-Thammar Al-Taiba Drinking Water Bottling Company	12
8	Kunooz Drinking Water Bottling Company	12
9	Al Safwa Factory for Bottling Drinking Water	14

10	Shahd Drinking Water Bottling Factory	6
11	Arwa Factory for Bottling Drinking Water	8
12	Al Rowad Drinking Water Bottling Factory	12
13	Al-Waha Factory for Bottling Drinking Water	10
14	Victoria plant for bottling drinking water	8
	Total	180

Statistical Analysis:

Descriptive statistics were generated by SPSS.

3. RESULTS:

Study of quality management and control systems in locally manufactured bottled drinking water factories:

The reliability of the Cronbach s' Alpha questionnaire:

Cronbach'N	Of Items
8.886818	18

This indicates that the reliability of the questionnaire used in this thesis is very good. It is clear from the Cronbach s' Alpha stability coefficient of the questionnaire that the value of the coefficient was 0.946059.

Quality Management Assessment:

Table (2) shows the evaluation of quality management in drinking water bottling factories in the city of Benghazi. The evaluation concluded that there is quality management in drinking water bottling factories by 90%, while the percentage of 10% is that there is no quality management. The quality management was administratively independent by 90% and 50% are technically independent, while 100% are part of the public administration.

Table (2) Evaluation of quality management in drinking water bottling factories in Benghazi, Libya

Quality Management	n_i		Percentage٪	
	Yes	No	Yes	No
Is there an entity concerned with quality management?	162	18	90%	10%
Is the administration administratively independent?	162	18	90%	10%
Is the administration technically independent?	90	90	50%	50%
Is the administration part of a public administration?	180	0	100%	0%

Evaluation of quality management systems:

Table (3) shows the evaluation of the quality management system in drinking water bottling factories, where 60% of participants had a quality management system, 70% of them depended on systems and regulations, while 30% of them depended on internal orders and the quality management system agreed 90% with the World Trade Organization and other regional organizations and these regulations are not published by 20%.

Table (3) Evaluation of quality management systems in drinking water bottling factories in Benghazi, Libya

The systems	n_i		Percentage٪	
	Yes	No	Yes	No
Is there a quality management system?	108	72	60%	40%
Does quality management depend on systems or regulations?	126	54	70%	30%
Is quality management dependent on internal orders?	54	126	30%	70%
Are the regulations compatible with the World Trade Organization and other regional organizations?	162	18	90%	10%
Are these regulations published?	144	36	80%	20%

Quality Management Systems Regulations Assessment:

Table (4) shows an assessment of the needs of quality management systems in drinking water bottling factories in the city of Benghazi, where the regulations covered 90% of all fields, explained the regulations by 80%, and were in line with local regulations by 90%, and 80% of the drinking water bottling factories in Benghazi had management systems.

Table (4) Evaluation of the regulations of quality management systems in drinking water bottling factories in Benghazi, Libya

The systems	n_i		Percentage ٪	
	Yes	No	Yes	No
Are there regulations that explain the regulations?	144	36	80%	20%
Do the regulations cover all areas?	162	18	90%	10%
Are the regulations compatible with local regulations?	162	18	90%	10%

Evaluation of quality management control methods:

Table (5) shows the methods of control of quality management in drinking water bottling factories, where the results showed that 98% of the control methods were automated through technical programming and control devices, while 2% were manual control.

Table (5) Evaluation of quality control methods in drinking water bottling factories in Benghazi, Libya

Quality Control Methods	n_i		Percentage٪	
	Yes	No	Yes	No
Is the control automatic?	176	4	98%	2%
Is the control manually?	4	176	2%	98%

Evaluation of technical procedures in quality management:

Table (6) shows the evaluation of the technical procedures used in the quality management of drinking water bottling factories, as these procedures were following international technical procedures 80% and had special technical procedures 70% and the lack of clear transparency in those procedures by 40%, and 80% of these procedures are published and documented Most of the drinking water bottling plants in Benghazi have their own technical procedures.

Table (6) Evaluation of technical procedures in quality management in drinking water bottling factories in the city of Benghazi, Libya

Technical Procedures	n_i		Percentage ٪	
	Yes	No	Yes	No
Are there special technical procedures for water factories?	126	54	70%	30%
Are these procedures compatible with global technical procedures?	144	36	80%	20%
Is there transparency and clarity in these procedures?	108	72	60%	40%
Have the technical procedures been published and documented?	36	144	20%	80%

Evaluation of standards used in quality management:

Table (7) shows the standard specifications used in quality management in drinking water bottling factories, as it indicates the existence of a local institution for setting standards, and its specifications are followed by 90%, while 10% apply the specifications of the Codex Alimentarius Committee, bearing in mind that the commitment to implement these specifications is made by 90% of the participants. Factories did not participate in the locally issued specifications projects as well as in the meetings that discuss the specifications 100%, while the application of those specifications after their approval and approval was 90% and their application in all fields of production, circulation, and consumption of water manufacturing 90% and the application of these specifications was mandatory, which indicates the existence of a private local institution Specifications.

Table (7) Evaluation of Standard Specifications Used in Quality Management in Drinking Water Bottling factories in Benghazi, Libya

Specifications	n_i		Percentage ٪	
	Yes	No	Yes	No
Is there a local specification institution?	162	18	90%	10%
Are local specifications being followed?	162	18	90%	10%
Are the standards of the Codex Alimentarius Committee followed?	18	162	10%	90%
Is there a literal obligation to apply these specifications?	162	18	90%	10%
Do you participate in the committees of the Codex Alimentarius?	0	180	0%	100%
Is participation in the locally issued specifications projects?	0	180	0%	100%
Do you participate in the meetings that discuss the specifications?	0	180	0%	100%
Are the ISO specifications followed?	126	54	70%	30%
Are the specifications of the Arab Industrial Development Organization followed?	18	162	10%	90%
Are there any other regional and global organizations whose specifications are being followed	18	162	10%	90%

Evaluation of the quality management information centre:

Table (8) shows the evaluation of the information center used in quality management in drinking water bottling factories. The study showed that 80% of quality departments do not have an information center and are not linked to other countries and organizations. 20% of them contain national, regional and global standards and are not linked to the Codex Alimentarius Committee.

Table (8) Evaluation of the quality management information center in drinking water bottling factories in Benghazi, Libya

Information center	n_i		Percentage٪	
	Yes	No	Yes	No
Is there a local information center in the factory	36	144	20%	80%
Is the information center linked to other countries and organizations?	0	180	0%	100%
Is the information center a source of global information?	18	162	10%	90%
Is the information center the source of information for water producers in the country?	0	180	0%	100%
Is the information center a source of information for water producers in the country?	36	144	20%	80%
Does the information center contain national, regional, and global standards?	0	180	0%	100%

Quality Management Laboratory Evaluation:

Table (9) shows the evaluation of laboratories in the quality management of drinking water bottling factories. The results confirmed the existence of laboratories in all factories to conduct the tests and analyzes, 50% of the factories depend on public sector laboratories to perform some tests and do not depend on the private sector and external laboratories.

Table (9) Evaluation of laboratories affiliated to the Quality Department in drinking water bottling plants in Benghazi, Libya

laboratories	n_i		Percentage٪	
	Yes	No	Yes	No
Are there laboratories for the factory?	180	0	100%	0%
Are public sector laboratories relied upon?	90	90	50%	50%
Are external laboratories relied upon?	0	180	0%	100%
Have the technical procedures been published and documented?	0	180	0%	100%

Evaluation of the inspection methods used in quality management:

Table (10) shows the inspection methods used in quality management in drinking water bottling factories in the city of Benghazi, where 95% of the examination methods were internationally approved and documented, as well as related to specifications, 95% were not followed by selected and unapproved methods or methods from research.

Table (10) Evaluation of quality management inspection methods in drinking water bottling plants in Benghazi, Libya

laboratories	n_i		Percentage ٪	
	Yes	No	Yes	No

Are internationally approved and documented methods followed?	171	9	95%	5%
Are internationally approved, undocumented methods followed?	9	171	5%	95%
Are selective and undocumented methods being followed?	0	180	0%	100%
Are methods related to specifications being followed?	171	9	95%	5%
Are approved research methods being followed?	0	180	0%	100%

Evaluation of the workforce working in quality management:

Table (11) shows the workforce in quality management in drinking water factories in the city of Benghazi, where the vomiting was 90% specialized and trained,]and includes various disciplines 80%, but its knowledge of modern systems does not exceed 40%, and it includes expatriate cadres by 10%.

Table (11) Evaluation of the workforce in quality management in drinking water bottling plants in Benghazi, Libya

Quality management workforce	n_i		Percentage ٪	
	Yes	No	Yes	No
Is the workforce specialized and trained?	162	18	90%	10%
Is the workforce unspecialized?	18	162	10%	90%
Is the workforce familiar with modern systems?	72	108	40%	60%
Does the workforce include different disciplines?	144	36	80%	20%
Is the workforce made up of national cadres?	162	18	90%	10%
Does the workforce include expatriate cadres?	18	162	10%	90%

Evaluation of the accreditation system in quality management:

Table (12) shows the quality management accreditation system for drinking water factories in the city of Benghazi which confirmed that 100% of all drinking water bottling plants in Benghazi city are approved by local government institutions, not private or international institutions.

Table (12) evaluation of the quality management accreditation system in drinking water bottling factories in Benghazi, Libya

Accreditation	n_i		Percentage٪	
	Yes	No	Yes	No
Governmental institutions	180	0	100%	0%
Private Institutions	0	180	0%	100%
International Institutions	0	180	0%	100%

Evaluation of the preparation and qualifications of cadres working in the quality management:

Figure 1,2 and 3 shows the qualifications of the cadres working in the quality management in drinking water factories which indicated that quality managers hold a master's degree only 30%, while those who hold a bachelor's degree 70%, while the analysis technicians 80% have a bachelor's degree, while 20% of control technicians hold a diploma.
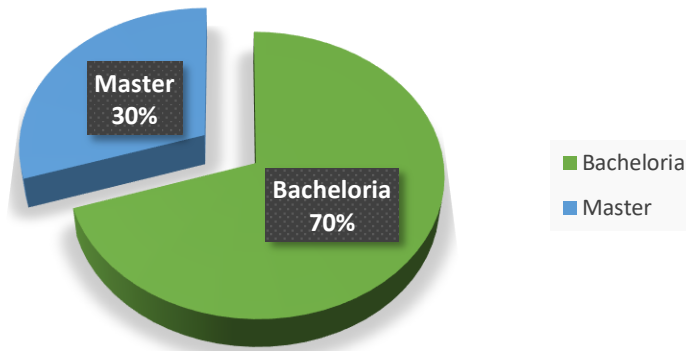

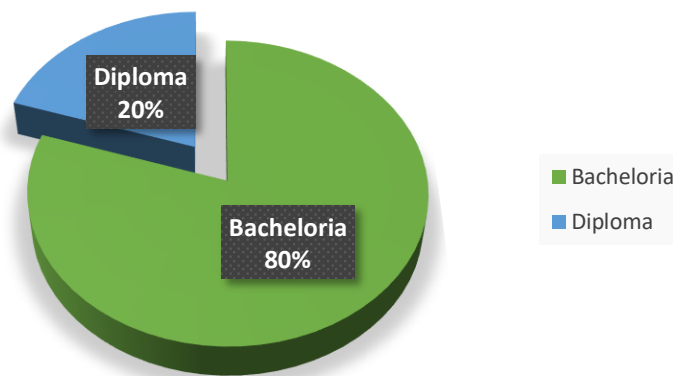**Figure (1) Assessment of the qualifications of managers in the quality management of drinking water bottling factories in the city of Benghazi, Libya**

Figure (2) Evaluation of the qualifications of analysis technicians in the quality management of drinking water bottling factories in the city of Benghazi, Libya
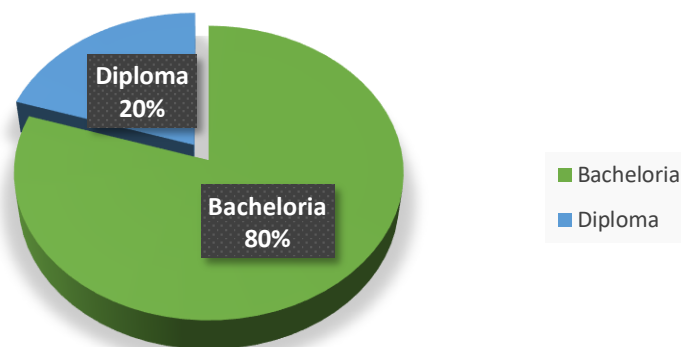

Figure (3) Evaluation of the qualifications of quality management control technicians in drinking water bottling factories in the city of Benghazi, Libya

Correlation Coefficient:

Table (14) shows the value of the quality management correlation coefficient with the rest of the axes in the questionnaire the user where from the table it is clear that the largest value of the quality management correlation coefficient was with the regulation axis with a significant direct correlation with a value of (0.873), followed by the systems axis with a value of (0.868), while the quality management found an insignificant inverse correlation with the examination methods with a value of (-0. 178) and an insignificant correlation with the information center with a value of (0.38), and through the values of the correlation coefficient, it was noted that all the correlations are significant with the quality management axis, meaning that the correlations have an impact on the quality management axis, except for the information center, examination methods and the workforce that showed a weak correlation With quality management, which indicates the need to improve and raise its efficiency.

Table (14) Correlation coefficient for quality management

1	2	Quality Management	systems	Regulations	technical procedures	Specifications	Mandatory application of specifications	Information center	laboratories	Examination methods	workforce
quality management	Divide the correlation coefficient	1	0.868	0.873	0.779	0.818	0.852	0.38	0.778	- 0.178	0.389
	probability value	0	0	0	0	0	0	0	0	0	0.0170
	Sample volume	180	180	180	180	180	180	180	180	180	180

4. DISCUSSION

With the development of administrative organization in the world, especially in large organizations, because of strong competition, the quality method has become one of the most important basic methods of application. This does not mean only product quality, but more deeply, the quality of the system. This equation cannot be achieved without effective construction and studied management systems based on the modern system of operations management through quality management. It becomes clear to us that the application of quality management will be an influential source as a powerful tool to reach excellence in work, and this will not be achieved.

Specialized.

Table (2) shows that companies and factories operate in the quality management system by 90%. While 10% had no quality department, the quality department was administratively independent by 90%, technically 50%, and 100% was part of the general administration. This indicates the awareness of companies and factories and the conviction of quality management and confirms the convincing of the private sector of the quality system and the importance of quality management in supporting departments.

As shown in Table (3), the evaluation of quality management systems in drinking water bottling factories, where it was quality management has a special system of 60% and 70% depends on systems and regulations where the plans are implemented in accordance with the instructions of higher management, which is the basis on which the support of quality management was built in order to develop and improve the performance of factories through quality management, as the system was 90% compatible with the World Trade Organization and other regional organizations. Where the regulations covered 90% of all fields, and explained the regulations by 80%, and were in line with the local regulations by 90%, as shown in Table (4-3). While Table (5) showed that 98% of the methods of quality control were automated through technical control and programming devices, which led to the success of these companies and factories in achieving high performance for quality management, which is reflected positively on achieving the goals in a scientific, coordinated and studied manner and the final return is very high and helps to reduce errors.

Whereas Table (6) shows that the technical procedures in quality management are compatible with the international technical procedures, but the evaluation indicated that 80% of these procedures are not published and documented, knowing that this feature is administratively important to spread the science of quality management to the rest of the departments. The evaluation also clarified in Table (7) that the quality management followed the application of the issued specifications locally by 90%, as well as international standards with a commitment to applying those specifications, and this is a major reason and a condition for obtaining a certificate of conformity for products and the circulation of goods, where the external audit is carried out by the government institution concerned in particular, and therefore all factories seek to implement the specifications in order to obtain certificates of conformity because of their fame and importance in The field of manufacturing and distributing its products.

The results of the evaluation of the information center of the Quality Department in drinking water bottling factories confirmed that 80% do not have an information center, and this negatively affects the knowledge of what is new in the science of industry and the lack of linkage of quality management with factories to the Food Codex Committees. Methods of examination, sampling, and analysis, in addition to what is followed in factories by working on it has laboratories to conduct tests and analyzes and rely on a small part of the tests and analyzes in the public sector laboratories, as shown in Table (8,9). The evaluation also showed that the examination methods used were approved and documented globally and linked to standard specifications by 90%, which indicates that the quality management works in a distinguished scientific manner and does not follow selective and unapproved methods (Table 10).

As shown in Table (11) the assessment of the workforce in the quality management, where the workforce was specialized and trained by 90% and had knowledge of modern systems, and this shows us that these factories are employed on a scientific basis, university certificates and experience, which

reflects the clarity of the vision of many of them and thus the recruitment of competencies to carry out functional tasks Quality management to perform the work efficiently and effectively. This comes by taking the right decision and makes the quality management prestige among other departments, which ultimately leads to respecting the decisions, notes and reports issued by the quality management and putting them into practice seriously.

 While Table (12) shows the results of the evaluation of accreditation in quality management in drinking water bottling factories in the city of Benghazi, which confirmed that 100% is accredited by government institutions. Local and not by private institutions. Correlation coefficient analysis was conducted on the study data to find out the initial picture of the interrelationships between quality management and the rest of the axes. Whenever the degree of correlation is close to the correct one, this means that the correlation is strong between the two variables.

 The lower the degree of correlation for one, the weaker the relationship between the two variables, and the relationship may be direct or inverse. In general, the relationship is considered weak if the value of the correlation coefficient is less than (0.30) and it can be considered medium if the value of the correlation coefficient ranged between (0.30) to (0.70). The relationship is considered strong if the correlation coefficient is more than (0.70). It is noted from Table (14) that quality management is positively and morally correlated with regulations, systems, obligatory application of specifications, specifications, technical procedures, laboratories, where the correlation value, respectively = (0.873), (0.868), (0.852), (0.818), (0.779), (0.778). It also had a positive, medium, significant correlation with the information center, the workforce, and the correlation value was, respectively, = ((0.380), (0.390), and an insignificant inverse correlation with the examination methods where the correlation value was (-0.178), with a study to measure the impact of quality management on the performance of the Sudanese food industries sector, which tested many hypotheses and concluded that there is a statistical significance between the conviction of the senior management to apply quality and efficiency of performance and spread its culture, as well as removing the obstacles that hinder quality management at all stages.[9]

In another study conducted in Sudan to assess the impact of the application of quality management in Sudanese food products, and the most important finding of the study is that the application of this approach results in goods of high quality, distinctive, free from defects and preferred by the consumer and fulfills his needs and implicit desires, as it achieves a high percentage of profits by reducing the percentage of Loss and damage in the final product, and the dissemination of the organizational culture that enhances the spirit of cooperation among workers and achieve job satisfaction for them and a radical change in beliefs, values, concepts and management style of leadership, which performs their work in the right way as the success, continuity and survival of the factory depends on the application of quality in the products.

The researcher recommended applying this approach in the rest of the Sudanese food factories and other products and the formation of a Sudanese body of quality experts in charge of setting quality standards and following up their application and evaluation and the extent of their conformity in those products. [9] Through this evaluation of the study of quality management and control systems in factories of manufactured bottled drinking water, it was found that it agrees with the field study to compare the reality of quality management in private sector institutions in the Kingdom of Saudi Arabia.[10]

With the development of administrative organization in the world, especially in large companies, as a result of strong competition in some cases, the quality method has become one of the most important basic methods of application, and this equation cannot be achieved without the effective and thoughtful construction of an administrative system based on advanced modern systems the researchers recommended some points: the importance of the state's great role in developing performance in factories through the enactment of laws and legislation. Linking quality management directly to the highest executive authority in the company or factory through the organizational structure. Emphasizing the importance of establishing a specialized department for quality and allocating a budget for it.

Awareness and spreading the concept of quality and exploiting the gradual emergence of awareness and conviction in quality management, as companies' awareness of the value of quality management earns them credibility that will help them in development and expansion to make a big difference in achieving goals. The need to pay attention to strengthening the application of quality management and control systems to reach excellence in work and its positive and important impact represented in quality, profitability, productivity, and the level of customer satisfaction with the products provided. Commitment to the application of quality management systems and regulations and work to establish an information center for quality management. Urging the application of standards, laws, and regulations in force in the country. Strengthening cooperation with academic bodies through joint research programs, which will be beneficial for both parties.

In conclusion, researchers were found that most of the factories operate in the quality management system and are administratively independent and considered as part of the general administration. It was clear from the evaluation that the quality management was linked to the rest of the axes, as there was a strong moral link with the systems, regulations, specifications and their application, technical procedures, and laboratories, while it had a medium moral connection with the Center Information and manpower. It was also found that quality management is based on systems and regulations for the purpose of developing and improving performance in factories, through which quality control laboratories work to apply the standard specifications in force in the country with internationally approved and trusted examination methods. The importance and prestige of quality management among departments, respecting their decisions and making them the subject of implementation.

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