

Ben Gurion University of the Negev

Guilford Glazer Faculty of Business and Management

**Defining the role of the quality manager and its relationship with organizational resilience and success**

 Doctoral Studies

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# Abstract

Recent years have seen a number of quality standards violations in Israel and around the world. These incidents have negatively impacted on product use and damaged companies’ images and profits. This situation was exacerbated during the coronavirus pandemic. As a result, there has been a growing awareness of a crisis in quality, even in organizations that have sound quality control systems, including regulations for monitoring and controlling product quality. I argue that the status of quality managers needs to be institutionalized because their ability to perform well in their role depends on the culture in the organizations employing them. Currently, authority is conferred upon quality managers by virtue of their position within their employing organizations, and not by regulators (such as the Ministry of Health). This study argues that the profitability of companies in Israel is harmed by a poor culture around quality control, including by a tendency for companies to employ quality managers who lack knowledge and authority. Anker and Lurie (2022) argue that the difficulty in characterizing quality managers as experts is a result of the vague and even ambiguous nature of their role. Quality managers must recognize and use different communication styles, and the extent of their success depends to a large extent on the culture of their employing organizations.

This work expands on past research on the authority and expertise of quality managers in Israel, first in terms of other semi-professional roles in their employing organizations, and second by comparing the expertise and authority of quality managers in different sectors. Further, it examines how quality managers handle challenges in their day-to-day work in routine times and emergencies. The study also explores the roles of quality managers within the structure of their employing organizations, the mutual relations between them and other roles (which may be considered more professional) through qualitative interviews and observations with quality managers, and a quantitative questionnaire to cross-check the data obtained in the previous stages.

**Keywords**: Quality, Quality managers, Israeli Society for Quality, authority

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# Chapter 1: Introduction

# Research subject and research questions

In this study, I examine the role and influence of quality managers in their organizations and in various sectors. The study expands on existing work examining the authority and expertise of quality managers as a profession, with respect to their colleagues in other semi-professional roles (i.e., who have similar status to quality managers within their employing organizations) and in various business sectors, in particular in light of the increase in food and drug standards violations (Ministry of Health website[[1]](#footnote-1)). The study examines the role of quality managers within the structure of their employing organizations and the relationships between quality managers and other semi-professional employees, through qualitative interviews and discussions with quality managers, and a quantitative quant to cross-check the data obtained in the previous stages.

In most organizations, quality managers are responsible for product quality. However, in Israel and other countries, the role of the quality manager is not well-defined, and any authority they have is effectively conferred on them by their employing organizations rather than government regulators. Anker and Lurie (2022) argue that the difficulty in characterizing quality managers as experts lies in the vague and even ambiguous nature of the role. Quality managers must recognize and use different communication styles, and the degree of their success depends mainly on the culture in their employing organizations. Anker and Lurie’s 2022 study was undertaken within a broader context of recognized professions (including pharmaceuticals and law) and showed that quality managers require relevant knowledge of their employing organization’s field as well as training in quality control and assurance. Some respondents thought that quality managers should be granted official regulatory authority by giving them professional status. Others believed that authority should be conferred on quality managers by their employing organizations ([Anker & Lurie, 2022](#Anker)).

This paper expands on past work examining the authority and expertise of quality managers with regard to other semi-professional roles (i.e., those with the same status in the employing organization), including, inter alia, marketing managers, operations, production, planning control, and human resources.

This work also examines the authority and expertise of quality managers in different sectors, in light of the rise in standards violations in food and drugs manufacturing (Ministry of Health website2). I argue that the profitability of companies in Israel is harmed by a poor culture of quality control, including a tendency for companies to hire quality managers who lack knowledge and authority.

The study will include in-depth interviews with quality managers from different sectors and observations of their activities to understand how they deal with day-to-day work challenges. The research will use an integrated methodology, incorporating qualitative (interviews and observations) and quantitative research (questionnaires).

The study will include three chapters:

1. **Chapter 1** – will provide a review of the literature on the status of quality managers in various industry sectors in the context of their expertise and authority.
2. **Chapter 2** – This chapter will examine the authority and expertise of quality managers in their employing organizations in Israel with respect to other semi-professional roles in the same organization (i.e., those that have the same status), including: marketing, operations, production, planning control, and human resources. According to academic papers, most failures are caused by a lack of involvement in quality by senior management. therefore, the hierarchical position of quality management and relation between quality the top management are very important. In this study, I will examine the role and influence of quality managers in their organizations and in various sectors. The work will rely on a study of the organization’s internal documents. The following questions will be asked:
* Who defines the job description for the quality manager position?
* Who defines the work plan for quality control?
* Who approves the work plan for quality control?
* Are any success indicators defined for the position?
* To whom does the quality manager report when there is an exception in the organization?
* To whom does the quality manager report when there is an exception outside the organization?

**Chapter 3** – This chapter will examine the authority of quality managers in different sectors (including pharmaceuticals, pharmaceuticals, food, the service industry, hi-tech, and the military). The data obtained in Chapter 2 will be further examined via interviews and observations with quality managers.

In this study, I will address the following questions:

1. Is it essential that every organization appoint an individual or team responsible for quality control? Through a critical analysis of the findings obtained through the qualitative and quantitative parts of this study, I will examine the importance of the role of quality managers in organizations;
2. What is the authority of a quality manager in an organization compared to other semi-professional roles in the same organization?
3. Does the authority of quality managers and their influence within their employing organizations differ among industry sectors?
4. How do quality managers deal with challenges in their day-to-day work?

# Literature review

Strict customer demands regarding quality standards have led organizations in Israel to appoint quality managers even though they are not required to do so by law. In this study, I argue that the role of the quality manager needs to be institutionalized, since currently, their successful performance in the role depends on the culture of the organizations employing them. Quality managers must ensure that the demands of industry regulators and consumers are met, but at the same time they are also part of the management structure in their own organizations, which seek to implement processes quickly and save resources and time. It is common for an organization’s management to see quality control as a function that “burdens” production processes, and quality managers find themselves in conflict with senior management and the consumer and/or regulator.

In Israel, quality control as a profession developed from the area, with a low level of regulatory intervention. There has been no oversight from academic experts, and developments in the profession have been disconnected from those in other countries. Quality control is a profession that requires soft skills and there are no restrictions over who is appointed to the role in terms of education, training, or professional qualifications This is also reflected in the fact that, often, quality managers are granted minimal authority in their role.

There are three main aspects that characterize the role of the quality manager:

1. Relevant knowledge—a professional background pertinent to the employing organization.
2. The ability to work in a team, represent stakeholders, and communicate well with all stakeholders in the employing organization.
3. Extensive knowledge of the quality profession and the employing organization.

In recent years there have been various quality standards violations in Israel and other countries. In some cases, these have harmed human health, and have also impacted on the profitability of companies. These events were exacerbated by the coronavirus pandemic. Eldina (2020) examined the impact of the pandemic on quality management procedures in food industries, and found that closures led to difficulties in transporting goods between countries, that there was an increase in demand for food products, and a decrease in the market for agricultural equipment. In light of this, organizations shifted employees between departments without appropriate training, which affected the safety and quality of products sold to the consumer. Barel (2022) identified an increase in incidents of quality standards violations, including in organizations with good quality control infrastructure and teams whose role is to monitor and control the quality of products in companies.

The events of the pandemic can also be viewed as an opportunity for organizations to improve quality control. The United States Food and Drug Administration (which is very conservative) agreed to speed up the process of approval for a Covid-19 vaccine from 12 years to 18 months, based on the fact that the pharmaceutical companies involved in developing vaccines (Moderna and Pfizer) had built quality control infrastructure into their core processes. Anker (2022) argued that the difficulty of characterizing quality managers as experts lies in the vague, even ambiguous nature of their role. They must recognize and use different communication styles, and their successful performance depends mainly on the culture of the organizations in which they are employed.

Corporate culture is crucial in distinguishing between two main types of organization: organizations that are excellent and provide real value to customers and will, therefore, be successful over time, and organizations that do the minimum necessary, do not renew themselves, and usually will only survive for a while.

I argue that there are four main types of organizations in Israel in terms of their approaches to quality control:

1. Organizations that operate according to government regulations, e.g., the pharmaceutical and food industries. Quality assurance and regulation are critical elements in every food, and drug company. The reason for this lies in the importance of maintaining strict hygiene in the production, packaging, and distribution of human grade food products. In Israel, strict laws governing food production, which are enforced by the Ministry of Health, have led to an increase in the requirements for quality assurance management in food manufacturing businesses, to ensure product safety and quality. Food quality control is performed by professionals, who ensure that companies comply with Israeli and international standards.
2. Military organizations that work with the aviation or aerospace industries and the Ministry of Defense (e.g., the Israeli Air Force, Rafael Advanced Defense Systems, Beit Shemesh Engines). The demand for these organizations to hire quality managers comes from their customers (e.g., Boeing, Airbus) or from within the existing organizational culture (e.g., the R&D culture in the Israeli Air Force, which is different from the rest of the Israeli military).
3. Hi-tech companies (except software quality managers) that usually are not required to employ quality managers, but that have a culture of quality control that is instilled in employees, given that poor quality work negatively impacts on profits.
4. Manufacturing organizations and service providers constitute (in the opinion of the research author) about 75% of all organizations. There is no requirement for these organizations to hire quality managers.

Some of these organizations employ external consultants for standards certification, while those employed in this role are considered a “burden” and in most cases are pushed away due to business considerations.

Anker (2022) argued that the authority of quality managers who are hired to help their organizations comply with government regulation, e.g., in the pharmaceutical and food industries, is greater than that of those who work in industry and service. In this study, I expand on past work examining the authority and expertise of quality managers in relation to other semi-professional roles in the organizations that employ them (including marketing, operations, production, planning and control, and human resources managers).

This study examines the role of the quality manager within the structure of the organizations that employ them and the interrelationships between them and other semi-professional roles, via interviews and observations with quality managers and a questionnaire to cross-check the data obtained in the previous stages.

# The history of quality

The concept of “quality” has existed since humans began creating products. In the Middle Ages, craftspeople and toolmakers based their professional pride and economic success on creating high quality goods that would ensure their customers were happy. To this end, craftspeople had to manage the quality of their work. From the end of the eighteenth century, after the Industrial Revolution ushered in an era of mass production, workers’ salaries became based on the quality of their output, and therefore the amount of proper production provided to users decreased. Factories now needed to employ “quality inspectors” within their production lines. The impact of this was felt in three industries in the United States: the arms industry, consumer goods, and agricultural equipment. The need for change became apparent when only a third of all ammunition that reached the battlefield was in good condition. The use of the term “quality control” began to describe a process of assuring product quality using statistical control methods and standards.

In recent years, companies have begun to understand that statistical methods and quality standards are not enough. Today, companies often use the term “organizational quality and excellence” (some companies also make reference to “innovation”) alongside other terms, such as management, “employee empowerment,” “learning organization,” “knowledge management,” and other terms indicating care for customer and employee needs. It also became clear that adherence to quality standards requires coordination between all areas of knowledge in an organization, to create a level of standardization that can reduce the number of production errors to a minimum.

Product quality is measured according to a set of requirements. These include the organization’s internal procedures, quality standards, regulatory requirements, and the customer’s requirements, from which the production process is derived. Efforts to improve quality are concentrated on the product itself and the entire production process. The goal of commercial organizations is to maximize profits. Since revenue comes from the sales of products and services to customers, the amount of profit a company makes depends partly on customers deciding that they are satisfied with the quality of a company’s products and services (since quality is an objective characteristic).

According to [Edwards](#Edwards) (1950), defective products have a cost since “someone produces them and pays for the repairs, at least the cost required to produce them the first time.” Most organizations employ a quality engineer, whose responsibility is to ensure compliance with the requirements of the regulator and the consumer, but whose degree of authority and expertise varies from one organization to another. The role of the quality manager is very complex—they are required to make numerous decisions over a short period of time, based on the knowledge they have gained, even if a particular decision goes against those of other roles—e.g., those of the operations, purchasing, or research and development manager. Without the authority (organizational or regulatory) to perform the role there is a high chance of an increase in quality violations ([Anker & Lurie 2022](#Anker)).

# The purpose of the study

In this study, I will examine the role and influence of quality managers in their organizations and in various sectors with respect to other semi-professional or quasi-professional managerial roles in their employing organization (inter alia, marketing, operations, production, planning and control, human resources) and also compare the authority of quality managers in various sectors (pharmaceuticals, food, the service industry, hi-tech, and the military). I will also examine how quality managers deal with the challenges they face in their day-to-day work (in both routine and emergency times).

This work will rely on internal documents from employing organizations that show the position of quality managers within the organizational structure, the interrelationships between quality managers and other semi-professional or quasi-professional roles, as well as interviews and observations with quality managers, and a questionnaire to cross-check the data gathered in the previous stages.

# Research hypotheses

The research hypothesis is that differences in the expertise and authority of quality managers with respect to that of other semi-professional or quasi-professional roles in their employing organizations (e.g., marketing managers, operations managers, production managers, planning and control managers, human resources managers) and with respect to various market sectors (pharmaceuticals, food, the service industry, hi-tech, and the military), negatively impacts on their ability to prevent quality violations. The research hypothesis was formulated based on a literature review of critical terms: expertise, authority, organizational culture, and extreme events. The theoretical basis of the research was examined by Anker and Lurie (2022).

# Research methodologies

The research will be conducted in two stages:

1. **Structural analysis** - In this stage, I will examine the authority and expertise of quality managers in their employing organizations with respect to other semi-professional or quasi-professional roles with the same status.
2. **Qualitative and quantitative analysis** - In this stage, I will compare the authority of quality managers within different industry sectors, using data obtained in the first stage of the study via interviews and observations with quality managers, and a questionnaire to cross-reference the data obtained in the previous stages.
3. **Qualitative observations** - a sample of experts. In-depth interviews will be conducted with quality managers from the pharmaceuticals, food, service, and hi-tech industries, and the military. All interviewees will have over 10 years of experience in quality. The interviewees will also be asked to describe how they deal with challenges in their day-to-day work.
4. **Quantitative** - a closed questionnaire will be sent to quality managers by email, posted on the website of the Israeli Quality Association, and made available at leading quality control conferences in Israel. The respondents will be from various sectors including industrial, service, food, medical, high-tech, and military sectors and differed in terms of their seniority and experience in quality control.

# The importance of the research and its expected contributions

This is a groundbreaking study on quality control that aims to deepen knowledge and clarify important issues in this field. Its findings can help connect the expertise and authority of quality managers in their employing organizations and in various industry sectors to deepen this knowledge further.

In the last decade, there has been a trend toward standardizing the professional status of various roles, including that of quality managers. This study can therefore serve as a theoretical anchor to help strengthen the role of quality managers and support professional development, including through reclassifying quality managers as professionals, which in turn will help them contribute to AI (artificial intelligence) and organizations.

# Limitations of the study

The extent to which the findings of this study can be generalized to the entire population of quality managers in Israel and globally, or even across industry sectors, is unclear. The organizations examined in the study’s qualitative section will not be randomly selected. At the same time, the quantitative survey will be sent to as many quality personnel in Israel as possible, some of whom are affiliated with the Israeli Society for Quality, which may influence their position in the field and the discourse.

# Chapter 2: Theoretical background

The influence of the authority and expertise of quality managers in different organizations has been examined in the literature. The recent events that took place in quality control (see below) show that there is a connection between organizational culture and product quality, and that neglecting quality can lead to substandard products. In most organizations, the role responsible for quality culture is that of the quality manager, so it is likely that this role has an influence on product quality. This study is based on the premise that while responsibility for quality lies with the quality manager, the level of professionalism and expertise of those in this role varies from one organization to another (commercial, public, voluntary, and military).

The research hypothesis is that differences in the expertise and authority of quality managers with respect to that of other semi-professional or quasi-professional roles in their employing organizations (e.g., marketing managers. operations managers, production managers, planning and control managers, human resources managers) and with respect to various market sectors (pharmaceuticals, food, the service industry, hi-tech, and the military), negatively impacts on their ability to prevent quality violations.

The basic concepts include an overview of the professional and epistemological authority, and the ethics of the profession ([Anker & Lurie, 2022](#Anker)). Further, the concept of organizational culture (see section 2.1.2) and extreme events (see section 2.1.3) will be expanded. The research methods are described in Chapter 3.

# Literature review

* + 1. **Authority and expertise in the context of the quality management**

Anker and Lurie (2022) discussed the concept of “profession” and the authority and expertise of recognized professions (doctors and lawyers) in the context of quality managers across different types of organizations in Israel.

In this study, I will expand this examination to the following sectors:

1. Commercial organizations – manufacturing organizations (e.g., food, cosmetics, hi-tech, etc.) and service providers (e.g., restaurants, shops, travel agencies, hotels, hairdressers, and gyms).
2. Public organizations – organizations engaged in providing services to all residents of the country (e.g., municipalities, hospitals, etc.).
3. Voluntary organizations – organizations that operate to promote interests or provide various services to their members or to defined groups (the Israeli Society for Quality, etc.).
4. Military organizations – organizations related to the military or providing products to it (e.g., the Israeli Air Force, Rafael Advanced Defense Systems, Beit Shemesh Engines).
	* 1. **Organizational culture**

Culture is a key concept in social science research. Corporate culture is a cognitive system that includes beliefs, attitudes, values, behavioral norms, shared assumptions, and expectations that shape the way people act and manage interactions in the organization ([Parker, 2000](#Parker)).

One of the well-known models for studying organizational culture was developed by Edgar Schein (1994, 2004), and offers analysis at three levels: (a) a basic level—the values used in the field; (b) the values that characterize an organization (each organization has values regarding what it considers to be acceptable and desirable behavior). Sometimes these are declared values that the organization strives for and implements in their daily norms; (c) the basic assumptions on which the organization is based.

Corporate culture can be seen as a sort of genetic code or glue that connects employees to the organizations in which they work and to the external environment, and directly affects various aspects of their professional and personal behaviors.

Quality (“the customer at the center”) is an important factor that distinguishes between an organization that strives for excellence, and one that does the minimum necessary (an organization that will not survive over time).

In 2020, a research survey was published[[2]](#footnote-2) that examined the program’s contribution to promoting quality and excellence in industry and associations in northern Israel. The findings show that the organizations that who won the competition have an orderly quality infrastructure across their operations, and a culture of quality that extends from management to the most junior employees (see Table 22 ).

The factors responsible for corporate culture include:

* 1. The external environment.
	2. The organization’s management.
	3. The employees of the organization.

We recognize four types of dominant organizational culture:

* 1. Sales culture (market culture)—this focuses on mutual or exchange relations with external entities including suppliers, customers, contractors, unions, and regulators.
	2. “Clan” culture—this is characterized by teamwork (employee involvement and the organization’s commitment to the employee). Such organizations are managed in the best way through teamwork, development, and investment in staff, a humane work environment, loyalty, and tradition;
	3. Hierarchical—these organizations are very structured and formal, and are oriented towards stability over time, with the ability to predict the future, and efficiency. There is a stated policy and clear and official rules;
	4. Adhocracy - which focuses on cultivating adaptability, flexibility, and creativity even under conditions of uncertainty. There is a large emphasis on innovation alongside individuality, and a high level of involvement of employees in production, research, and development.

Corporate culture = the culture for quality, which refers to commitment and focus on the customer. Quality-oriented culture (“the customer at the center”) is the most important factor that allows us to distinguish between an organization that strives for excellence and provides real value to its customers (an organization that will succeed over time), and one that does the minimum necessary (an organization that will not survive over time). Organizations that have learned how to promote quality have been able to maximize their profits and survive ([Ashwin & Bryan, 2014](#Ashwin)). For example, the Kodak company lost 90% of its shares and filed for bankruptcy because it did not move into digital photography in time.

One of the reasons for the difficulty in matching authority and expertise in the context of the quality manager is the influence of controlled factors on uncontrollable factors and performance measures ([Goold, 1993](#Giddens1984); [Merchant & Otley, 2006](#Merchant2006)). In the context of quality, are failures unexpected (uncontrollable) events or negligence? Can quality managers influence uncontrollable factors? A lack of answers to these questions makes it difficult to prove the hypothesis that a quality manager with authority and expertise can reduce and/or prevent the events mentioned above. Therefore, the extent of an individual’s success in their role depends to a large extent on the support given by their organization’s management, other employees, and their organizational culture ([Ericsson, 2007](#Ericsson)).

The author of the study defined four main types of organizations in terms of their attitudes toward quality:

1. Organizations that operate according to government regulation, e.g., the pharmaceutical industry and the food industry. These organizations are required by the regulator to hire a quality manager and the authority of the role is granted by virtue of the law or regulatory standards;
2. The high-tech industry is not required by the regulator to hire quality control staff. However, some companies have a quality culture that is instilled in all employees;
3. Industry and service providers, which I argue constitute about 75% of all organizations, has no regulatory requirement to hire quality control staff;
4. The IDF- There is no requirement to hire a quality control position. Quality culture varies within the IDF (despite the rapid turnover of soldiers, quality culture in the Israeli Air Force is higher).
	* 1. **Extreme events**

Extreme events are events whose chances of occurrence are estimated to be very low, usually result in negative outcomes, and are defined as “disruptive” in that they undermine the existing order. These include natural disasters, terrorist events, military activity, accidents or technological failures, and pandemics (e.g., Covid-19). The impact of such events is far-reaching, and organizations and systems must be prepared for them.

Response to extreme events varies from one country to another. In Israel, there has been a permanent state of emergency since its declaration of independence. The state of emergency must be renewed on an annual basis. During an extreme event, the minister in charge declares that there is a grave danger and initiates a legislative procedure in the Knesset to declare a state of emergency, in accordance with the Defense (Emergency) Regulations (1945).

In 2020, the coronavirus pandemic impacted on ordinary life and forced people to adapt to working at a social distance. The decision on implementing social distancing in Israel began with the declaration of a state of emergency under the Law of Special Authorities to Deal with the Novel Coronavirus (Temporary Provision) 2020, which, among other things, defined essential workplaces in addition to the concept of the essential worker (an employee who is deemed essential in order for a business to continue to operate).

The impact was also felt in quality control, and companies had to use creative ways to ensure that they complied with quality standards and that their products were suitable for the consumer, e.g., tests that had been carried out on site had to be performed remotely.

During the pandemic, the author of the study (the chair of the Israel Association for Quality) identified differences between organizations in terms of whether quality managers were allowed to be on site. In the food and medical fields, quality managers were defined as essential employees, while quality managers in the industrial sector and service industries were defined as non-essential employees.

In 2022, the author sent an attitude survey to 520 quality managers in Israel. The findings showed:

* 1. **Correlation between the role of the quality manager and organizational culture.**

In 2022, the research author sent a questionnaire to 520 quality personnel in Israel, with the aim of testing the correlation between professional and success in the quality manager role. This included an examination of the suitability of the criteria required to perform the role of quality manager, including analytical ability (the ability to solve problems quickly); critical thinking (after identifying the problem, the ability to find a solution), attention to detail, teamwork skills, extensive knowledge of the quality profession, authority to perform the role, integrity, openness, and relevant knowledge of the employing organizations’ field of practice.

The questionnaire was created using Google Forms and sent to participants or posted on social media (Facebook, LinkedIn, and WhatsApp). Each questionnaire took an average of 10 minutes to complete. Data analysis was completed using SPSS and is based on a Chi-squared test.

A total of 49 quality professionals responded to the survey. The findings showed that some respondents did not begin their careers in quality, but came from other fields. In terms of quality as a professional field, respondents considered this to be a true calling that they chose as part of their personal career development. Respondents said that when they began working in the role, they did not feel they had regressed in terms of their image or authority, a trend that has changed since a survey carried out in 2012 ([Akroni & Milo 2012](#Akroni)).

Over 70% of respondents believed that teamwork skills and critical thinking were more highly valued than relevant knowledge in quality. Most respondents thought that soft skills were more important than relevant quality assurance knowledge or authority to perform the role.



Graph 1: Which characteristics reflect your role in the organization?

Over 86% of respondents believed that, as their level of professionalism increased, their success in their position also increased, which could be expressed in terms of the authority granted to them by stakeholders to prevent quality violations. Most respondents believed that employees who “challenge the quality manager’s opinion in certain cases” harmed their ability to perform their duties and limited their authority with respect to stakeholders, which in turn prevented them from being a partner in the success of the business. These results are consistent with the article published in 2022 ([Anker and Lurie](#Anker)).

* 1. **A survey to examine the impact of the coronavirus pandemic on quality management in organizations**

In 2022, the research author carried out a survey to examine the impact of the coronavirus pandemic on quality management in organizations. The questionnaire was created using Google Forms and was sent to participants by email or posted on social media (Facebook, LinkedIn, and WhatsApp). A total of 137 quality personnel responded to the survey. The questionnaire took an average of 10 minutes to complete. Data analysis was undertaken using SPSS and is based on a chi-square test.

The findings showed that over 76% of quality managers in Israel worked on-site during the lockdown period. Over 82% of respondents believed that the importance of quality did not change during this period. Over 81% of respondents said that their job depended on the erogenous culture. Over 76% of respondents who worked on-site believed that their status had not changed, those who did not attend work (because they were either furloughed or made redundant) thought that quality culture was the cause of the decrease in quality and safety and in their status.

* + 1. **The functional authority (role) of Quality managers**

The responsibility for the quality of a product lies with everyone involved in its preparation (ISO:9001), but quality managers are required to have knowledge of quality standards and relevant laws in order to ensure that their employing organizations comply with them, and as such they are informally responsible for product quality.

Since quality managers do not hold authority by virtue of their position ([Ekroni & Milou 2012](#Ekroni)), they must base it on personal and professional relationships with other employees. Moreover, I argue that the challenges facing quality managers are likely to increase in the coming years, in light of the fact that consumer demands for compliance with quality standards are getting stricter. However, requirements for quality knowledge and the authority to perform the role have not changed and remain minimal ([Akroni & Milo 2012](#Akroni)). Quality managers state that, for their opinions to gain validity among managers and employees, and for them to be able to verify that a product meets consumer requirements and warn of any possible deviations, they must be granted authority with respect to the areas of expertise of their employing organization ([Akroni & Milo 2012](#Akroni)). Since quality managers do not hold authority by virtue of their position ([Ekroni & Milou 2012](#Ekroni)), they must base their authority on personal and professional relationships with other employees. Quality managers are required to have knowledge of quality standards and laws in order to ensure that their employing organizations comply with these, and as such they are informally responsible for product quality). An organization that implements quality work practices easily gains the trust and interest of existing and potential customers.

The cost of fixing a problem increases by orders of magnitude as the length of time after it occurred increases—the cost doubles in development phase, increases by10 times in the production phase, a hundred times in the supply phase, and a thousand times in the legal action phase ([Labovitz & YuSang Chang, 1992](#Labovitz)). For quality managers to prevent quality control violations, they must be granted the authority to create a quality system that includes all employees and the production system.

# Chapter 3: Research methods

This work expands on past research on the authority and expertise of quality managers in Israel, first in terms of other semi-professional roles in their employing organizations, and second by comparing the expertise and authority of quality managers in different sectors. Further, it examines how quality managers handle challenges in their day-to-day work in routine times and emergencies. The study also explores the roles of quality managers within the structure of their employing organizations, the mutual relations between them and other roles (which may be considered more professional) through qualitative interviews and observations with quality managers, and a quantitative questionnaire to cross-check the data obtained in the previous stages.

The work will be based on a mixed methods approach ([Denzin & Lincoln, 2005](#Denzin)). The qualitative section consists of in-depth interviews with 8 quality managers who have worked in the field for at least ten years, and who can provide detailed information and insights regarding the research topic. The study also involves observations of their daily work. The quantitative section is based on a questionnaire examining the role specification, requirements for professional development, and professional identity of quality managers. The questionnaire will be distributed at major quality conferences among a sample of quality managers from various organizations across different industries.

#  Research design

The study will take a mixed methods approach ([Denzin & Lincoln, 2005](#Denzin)), in which findings from different sources are cross-referenced. The triangulation method requires that data produced by various research methods is comparable and that several independent measurements are performed (Jick, 1979).

Research stages:

1. **Qualitative research**. This stage will comprise in-depth interviews of 3 hours per interviewee with 8 quality personnel. that they schedule observations in advance (one day in each organization) in order to see how they deal with challenges in their day-to-day work. The observations will provide in-depth information and insights about the phenomenon being studied and the research question.
2. **Qualitative method** (shadowing observations) Qualitative research is particularly suitable for the study of a new and unfamiliar phenomenon. The aim of this stage of the study is to identify the perceptions and expectations that quality managers have regarding their role, via in-depth interviews.

# Qualitative method

The qualitative tool is designed to reveal hidden cultural concepts ([Firestone, 1987](#Firestone)). Using this methodology allows for flexibility (monitoring what is happening in the organization), spontaneity (expanding the conversation in directions that were not foreseen in advance), repetition (through asking clarifying questions), extensive description, and the exposure of a variety of perspectives. Also, the qualitative approach examines how reality is perceived, the relationship between the researcher and research subject, and the limitations facing researchers (Denzin & Lincoln, 2005). The goal is to observe quality managers and see how they perceive their role and interpret it.

# The sample population

In order to create a representative sample, I will choose one organization from each industry, with the aim of examining the relationship between expertise and authority. I will write summaries of the observations and the transcripts will be sent to the organization for approval prior to performing a textual analysis.

# Sample

There is no rule of thumb for determining the number of quality managers or industries required to make valid observations. Instead, this relies on the epistemological and methodological views of the researcher ([Baker, Edwards, & Doidge, 2012](#Baker)).

#  Quantitative research.

A closed questionnaire will be sent to quality professionals by email, as well as being made available on the association’s website, and will be distributed at quality conferences in Israel. Respondents will come from a variety of industries, including the commercial, public, voluntary, and military industries, and from academia. Independent quality consultants will also be asked to participate.

# Quantitative methodology

The questionnaire was developed from past research ([Anker & Lurie, 2022](#Anker)). It includes statements describing the quality manager’s role, the role of management with regard to quality, and the personal traits of the quality manager. Using a questionnaire gives uniformity to the research since respondents are asked the same questions in the same order. Also, because I will use a closed questionnaire, it was possible to make meaningful comparisons between respondents.

# Sample

The sample will be taken from as wide a cross-section as possible of quality managers in Israel. The questionnaires will be distributed at quality conferences that are registered in the ISQ database.



The minimum sample size was calculated as follows: p = 0.5, SE= 5% ,95% (Z=1.96) is n= 384.16 ~ n=385.

# Research tools and data collection

Participants will be sent an email that will include a link to the questionnaire in Google Forms on the ISQ website. The questionnaire will take an average of 20 minutes to complete.

The questionnaire has four parts:

1. Statements describing the quality management role.
2. Statements describing the role of management with respect to quality.
3. Statements that reflect the personality of the quality manager.
4. Background data.

#  Data analysis

The data will be examined using SPSS. To test the reliability of the questionnaire and its consistency, Cronbach’s alpha will calculated. This calculation examines the internal consistency of questionnaire items. If the sample is 386 > n, I will use structural equation modeling using IBM SPSS[[3]](#footnote-3)Amos. Structural equation modeling is based on two main models, a measurement model and a structural model. The “observed variable” is a score extracted from a source questionnaire. The “latent variable” is the factor that explains the variation between the observed variables. The structural model details the causal relationships between the latent variables.

The fit indicators:

1. NFI (Number fit index): an alternative index to . This index takes into account the number of levels of calculation in the model. The NFI values are on a scale 0–1. Values of 0.90 and above represent an adequate match.
2. CFI (Comparative fit index): a comparative index that checks if a given model is better than other models. The CFI values are on a scale of 0–1. Values of 0.90 and above represent an adequate match.
3. C. RMSEA (root mean square error of approximation): an index that tests economy for a certain level of adjustment. The RMSEA values are on a scale of 0–1. A value of 0.05 and above represent an adequate fit. This index can be useful when the sample population is smaller than 250.

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[שאלון - תפקידו של המנהל באיכות](https://docs.google.com/forms/d/1wmLdHIFtRMkL2eF78UQxndEmCa7lKhSKgrZLQQQHXM8/edit)

**Appendix A - Questionnaire for the quantitative survey**

Dear Participant,

My name is Sharon Anker and I am a Ph.D. student in the Faculty of Management at Ben-Gurion University, supervised by Prof. Yotam Lurie.

In an article published in 2021, I examined the authority and expertise of quality managers in organizations (<https://academic.oup.com/jpo/article-abstract/9/1/62/6464076?redirectedFrom=fulltext>).

I would like to invite you to answer a few questions related to my research. The questionnaire will take about 15 minutes to complete. Please answer all the questions, and do not move on to the next question before you have finished the one you are on. There are no right or wrong answers—the correct answer is the one that reflects your role and perceptions.

All data will remain confidential and will be used for research purposes only.

The data will be very helpful in advancing knowledge about the quality profession.

For any further questions, please contact: shorn.anker03@gmail.com.

Thank you very much for your cooperation.

Please note that completing the questionnaire constitutes consent to participate in the study.

**Background data:**

A. Gender

1. Male 2. Female

B. Age

1. 20-39 2. 40-49 3. 50-59 4. 60-66 1. 67+

C. Your job description

Free text \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D. What is the main industry in which you work?

1. Food 2. Medicine 3. Service providers 4. Low-tech 5. Military 6. Defense industry

 7. High-tech 8. Business 9. Non-profit 10. Other

E. Education.(Please indicate the highest level of education you have achieved. Please choose only one.)

1. High school 2. Degree in quality 3. Engineering degree 4. Science degree

F. Quality certification (You can choose more than one.)

1. Quality Engineering (ICQE) 2. Corporate Quality engineer (ICQM) 3. Reliability

Engineering (ICRE) 4. Other

G. Are you certified by a professional association?

1. Yes 2. No

H. If yes, which?

1. The Israeli Association for Quality 2. The American Association for Quality 3. The European Association for Quality

I. Does your organization have a quality engineer?

1. Yes 2. No 3. I am a consultant.

J. Does your organization have a quality department?

1. Yes 2. No

K. What is the scope of the position in which you are employed?

1. Full time 2. Half time 3. Quarter time

L. How long have you worked in quality?

1. Less than 1 year 2. 1-5 years 3. 5-10 years 5. Over 10 years

**Below is a list of statements. For each, please indicate how important it is to you:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Strongly disagree (1)** | **Somewhat disagree (2)** | **Pretty much agree (3)** | **Somewhat agree (4)** | **Strongly agree (5)** | **Statement** | **#** |
|  |  |  |  |  | I always adhere to quality rules, without cutting corners or taking shortcuts. | 1 |
|  |  |  |  |  | I make decisions autonomously. | 2 |
|  |  |  |  |  | I have the authority with respect to other employees to enable me to perform my role.  | 3 |
|  |  |  |  |  | I have the authority with respect to management to enable me to perform my role.  | 4 |
|  |  |  |  |  | I have the expertise (knowledge) to perform my role. | 5 |
|  |  |  |  |  | My professional decisions cannot be changed. | 6 |
|  |  |  |  |  | I have the responsibility to perform my role. | 7 |
|  |  |  |  |  | My role provides added value to the organization and its employees. | 8 |
|  |  |  |  |  | I feel comfortable commenting on quality issues to other employees (without fear). | 9 |
|  |  |  |  |  | I feel comfortable reporting to my direct line manager about poor behavior from other employees (without fear). | 10 |
|  |  |  |  |  | There is a correlation between my professional knowledge and the degree of my success in my role. | 11 |
|  |  |  |  |  | My role is dependent on the organizational culture in my organization. | 12 |
|  |  |  |  |  | Appointing a quality manager raises the status of quality, professionalizes it, and gives it legitimacy and authority. | 13 |
|  |  |  |  |  | It is important to appoint a suitable person to quality roles and to train and empower them as professionals. | 14 |
|  |  |  |  |  | Quality managers have a defined role. | 15 |

**Below is a list of statements. For each, please indicate how important it is to you:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Strongly disagree (1)** | **Somewhat disagree (2)** | **Pretty much agree (3)** | **Somewhat agree (4)** | **Strongly agree (5)** | **Statement** | **#** |
|  |  |  |  |  | Management promotes quality at an organizational level. | 1 |
|  |  |  |  |  | When quality problems are reported to management, they respond quickly to solve the problem. | 2 |
|  |  |  |  |  | Management insists that quality checks be carried out regularly. | 3 |
|  |  |  |  |  | Management will stop any process or work that results in a defective product. | 4 |
|  |  |  |  |  | Management requires each manager to improve quality in their department. | 5 |
|  |  |  |  |  | Management provides all the professional tools required to ensure work is high quality. | 6 |
|  |  |  |  |  | Management invests in quality training, even though it consumes valuable time. | 7 |
|  |  |  |  |  | Training in quality helps improve understanding of the importance of product quality. | 8 |
|  |  |  |  |  | Management invests time and money in quality training for employees. | 9 |
|  |  |  |  |  | Management takes quality into account when determining production speed and timings. | 10 |
|  |  |  |  |  | Management gives quality personnel the authority they need to do their job. | 11 |
|  |  |  |  |  | Management requires each manager to help improve quality in their department. | 12 |
|  |  |  |  |  | Management uses all available information to improve quality. | 13 |
|  |  |  |  |  | Management provides employees with information on quality issues. | 14 |
|  |  |  |  |  | My co-workers follow production instructions verbatim, as they appear in the process instructions. | 15 |
|  |  |  |  |  | Management gives quality personnel the power they need to do their jobs. | 16 |
|  |  |  |  |  | Line managers praise employees who pay particular attention to quality. | 17 |

**Below is a list of statements. For each, please indicate how important it is to you:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Strongly disagree (1)** | **Somewhat disagree (2)** | **Pretty much agree (3)** | **Somewhat agree (4)** | **Strongly agree (5)** | **Statement** | **#** |
|  |  |  |  |  | Analytical ability (I identify problems quickly.) | 1 |
|  |  |  |  |  | Critical thinking (After identifying the problem, I can find a solution.) | 2 |
|  |  |  |  |  | Attention to detail | 3 |
|  |  |  |  |  | Teamwork  | 4 |
|  |  |  |  |  | Relevant knowledge of my organization’s work | 5 |
|  |  |  |  |  | Extensive knowledge of the quality profession | 6 |
|  |  |  |  |  | The authority to perform my job | 7 |

**Appendix B - Qualitative research**

**Dear Participant,**

My name is Sharon Anker, and I am a Ph.D. student in the Faculty of Management at Ben-Gurion University, supervised by Prof. Yotam Lurie.

In an article published in 2021, I examined the authority and expertise of quality engineers in organizations (<https://academic.oup.com/jpo/article-abstract/9/1/62/6464076?redirectedFrom=fulltext>

My research involves interviews and observations of quality managers in the workplace, to learn how they deal with challenges in their day-to-day work. The data collected will be very helpful in advancing knowledge about the quality profession.

You are asked to participate in an interview that will take about three hours, as well as several hours of observations in your organization.

Quality managers who participate will receive an analysis of their organization and its strengths, and suggestions for improvement.

Below are the questions that will be asked in the interview:

1. Do you think it is important that every organization appoint a person responsible for quality control?

2. Was there a requirement for a certification or training in quality for your role, for example, from the Israeli or American Association for Quality?

3. Did your position require a degree in a subject related to quality management?

4. Are you aware of the code of ethics of the Israeli Quality Association/the organization you work for? Do you act in accordance with this code of ethics? Do you know the ethics committee of your trade union, and its role?

5. Do you think your expertise in quality is recognized by all stakeholders in your organization? Can you give an example of a conflict where your expertise was challenged, by whom, and how was the problem resolved?

6. Are you given the appropriate authority to perform your role in your organization, and who gives this authority? Can you give an example of a time when your authority was challenged? Who challenged it, and how was this problem resolved?

7. Are there interactions between yourself and other roles in your organization?

9. Have you experienced any power struggles with your organization’s stakeholders? Can you give an example of a power struggle, and how you reached a solution?

1. מזון (www.gov.il) [↑](#footnote-ref-1)
2. [התוכנית לקידום איכות ומצוינות בתעשייה ובעמותות בצפון ישראל מבוססת על מחויבות לחברה ולקהילה של חברות גדולות ויחידים ממצאי סקר לערכת התרומות של התוכנית (neaman.org.il)](https://www.neaman.org.il/Files/%D7%94%D7%AA%D7%9B%D7%A0%D7%99%D7%AA%20%D7%9C%D7%A7%D7%99%D7%93%D7%95%D7%9D%20%D7%90%D7%99%D7%9B%D7%95%D7%AA%20%D7%95%D7%9E%D7%A6%D7%95%D7%99%D7%A0%D7%95%D7%AA%20%D7%91%D7%AA%D7%A2%D7%A9%D7%99%D7%99%D7%94%20%D7%95%D7%91%D7%A7%D7%94%D7%99%D7%9C%D7%94%20%D7%91%D7%A6%D7%A4%D7%95%D7%9F%20%D7%99%D7%A9%D7%A8%D7%90%D7%9C_20200122114539.584.pdf) [↑](#footnote-ref-2)
3. <https://www.ibm.com/downloads/cas/PQWMKEM5> [↑](#footnote-ref-3)