**On the professional authority of quality engineers and the gaps in their epistemic and organizational authority**

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# ABSTRACT

Although the role of the quality engineer can be defined, the authority of quality engineering as a profession is a contested issue that relates both to the occupation’s internal regulation and to the professional status of quality engineers within the organizations they work for. In this article, we examine the professional authority of quality engineers from both these perspectives. We focus on the situation in Israel as a case study, but our insights are relevant to quality engineers around the world. We demonstrate limitations with regard to both (1) the epistemic authority (expertise) of quality engineers vis-à-vis their professional association status, and (2) the organizational authority of quality engineers vis-à-vis their role as quality managers. These limitations can be attributed to the occupation’s status as a ‘semi-profession’: the level of expertise required is not fixed or uniform; the authority of a quality engineer varies from one organizational structure to another; and individual quality engineers are accorded different levels of influence, usually at the discretion of their employing organizations. For these reasons, the expertise of quality engineers as a professional group remains an open issue.

**KEYWORDS**: profession; authority; quality; quality engineer; expertise

# INTRODUCTION

The professional authority of quality engineering is a contested matter that relates both to the occupation’s internal regulation as a professional association with clearly defined standards of expertise and to the role and status of quality engineers within the organizations for which they work. This paper examines the professional status of quality engineers in Israel and argues that there are limitations to both (1) their epistemic authority (expertise), in terms of their professional association status, and (2) their organizational authority, in terms of their role as quality managers. Each issue is a manifestation of quality engineering’s status as a ‘semi-profession’: the expertise required is not fixed or uniform, and the authority of a quality engineer varies from one organizational structure to another. As a result, the professional authority of a quality engineer is not uniformly established or recognized; rather, it is determined locally, according to specific organizational arrangements. In most organizations, the role of the quality engineer requires ‘soft skills’ rather than unique knowledge ([Blades, Fauth and Gibb 2012](#Blades)). The authority of the quality engineer therefore stems from the norms and practices within the organization rather than from a regulator.

We examine the professional authority of the quality engineer in light of noteworthy quality failures that have affected both companies and consumers. Recent events involving quality-related flaws in production, manufacturing, and construction in Israel and worldwide have highlighted the need for professionalism in quality engineering and the issue of the authority – or lack thereof – of quality engineers. For example, a pharmaceutical company in Israel, Remedia Inc., changed its non-dairy baby formula without following quality engineering protocols, which resulted in the deaths of two infants and severe injuries to a further 23 infants (State of Israel v. Balak et al. 2013). Events such as these have stimulated discussion about the need to institutionalize the quality profession. Some quality engineers working in industry in Israel have gone as far as to claim that a professional and empowered quality engineer can reduce or even prevent the occurrence of such events, and that establishing minimum qualifying standards for practitioners will reduce the risk of similar errors.

The current article focuses on the situation in Israel, though its insights are relevant to companies around the world. It consists of two parts: the first part presents the theoretical construct underlying our argument, fleshing out the concept of a semi-profession in contrast with the ideal of a profession, and investigating the notion of professional authority in terms of both the epistemic authority of a professional association and the organizational authority of the individual within an organization. The second part demonstrates the argument empirically. The data for the research are derived from questionnaires and in-depth interviews with seven quality personnel from a range of leading disciplines, and an integrated qualitative method is used. The results provide insights into how quality practitioners perceive their professional role in the hierarchical structure of a firm and how managers can leverage the tension between expertise and authority for the benefit of their organization.

# PROFESSIONS AND SEMI-PROFESSIONS

## Professionalism: The ideal of a profession

There is consensus among sociologists that a professional group is an organization or association that holds unique theoretical knowledge and that requires its members to complete complex studies and post-examination certification (Abbott 1988). The literature differentiates between two types of professionals: those involved in major professions such as medicine or law (Glazer 1974) and those involved in semi-professional occupations such as teaching or pharmacy (Benveniste 1987).

In the literature, three criteria are commonly used to define an expert. The expert’s work should (1) produce successful results, (2) consistently match the work of peers, and (3) be capable of being reproduced and measured, taking into account differences between specializations ([Ericsson, Prietula and Cokely 2007](#Ericsson)). For example, cyber experts are evaluated by the degree of their success in protecting or penetrating technological systems, whereas medical experts are evaluated according to their knowledge and success in their medical specialization.

The term ‘semi-professional’, which is often associated with quality engineering, has been applied to occupations that require a relatively short period of training, do not have a standardized, uniform body of knowledge, and are largely based on technical skill. Because of their reliance on a relatively weak body of knowledge (among other reasons), the authority of semi-professionals vis-à-vis customers and the company or firm in which they work is lower than that of professionals. This is in contrast to the monopoly-like situation enjoyed by professionals, which allows them to oblige customers/employers to agree with their analysis of a situation and to accept the proposed treatment/solution ([Lysaght and Altschuld 2000](#Lysaght)(. It also enables the professional group to demand prestige and ample remuneration.

The literature also delineates three actions that all professionals perform when solving a problem: (a) diagnosis – collecting data and categorizing needs based on their extensive experience and knowledge ([Abbott 1988](#Abbott)); (b) identification – determining the source of the client’s problems and difficulties ([Hughes 1963](#Hughes)); and (c) resolution – addressing the problem to the subjective satisfaction of all stakeholders ([Abbott 1988](#Abbott)). In other words, the knowledge that the professional calls upon to help resolve problems is based on uniform, specific criteria for precise performance that are defined as guiding criteria for accurate performance of the occupation concerned. The law also plays a role here; each jurisdiction has methods of defining the uniqueness of a profession, and its legislators or courts set standards of performance as well as principles, restrictions, ethical prohibitions, and rules of conduct according to the values deemed unique to the profession.

Max Weber (1947) defined authority as ‘the likelihood that certain specific orders from a given source will be met by a given group of people’. The degree of success of a quality engineer in a position does not depend solely on this, but it does rely to a great extent on management support and on the behaviour of all the employees in the organization. Because of a lack of authority and knowledge, many quality engineers find it difficult to cope with the challenges they face ([Ekroni 2012](#Ekroni)).

## Semi-professions: Why not all occupations are professions

Professions have been conceptualized as incorporated bodies of experts applying theoretical knowledge in practice ([Carr-Saunders and Wilson 1933](#_Carr-Saunders_&_Wilson)). The members of the standard expert professions (such as medicine and law) are required to be well versed in a body of theoretical knowledge and trained in a range of appropriate skills and techniques, acquired in extended study and training that includes a long internship period and certification tests. Members must also abide by an ethical code and internal regulations, and accept disciplinary procedures should they fail to do so ([Freidson 1994](#Freidson1994)). In contrast, professionals working in the fields of cybertechnology, sports, and music base their expertise on ongoing training. As they work, they analyse and assess where they went wrong and how they can prevent future mistakes ([Ericsson, Prietula and Cokely 2007](#Ericsson)).

Professionals use their knowledge for the benefit of the public while protecting their knowledge regarding their clients. In other words, although they are granted the status of providers of services essential to the lives of their clients, their work does not necessarily produce positive results for those clients; a doctor’s patient may not recover, and a lawyer’s client may be convicted. Law cof expert witnesses , expecting that theywill behave in ways thatand

Being a member of a recognized association empowered to supervise professional education and qualification accreditation allows the individual professional and all the members of the association to assert legitimate claims of ownership of knowledge, expertise in the handling of certain kinds of problems, and jurisdiction in their field of competency. Achieving this right largely determines how much ‘power’ the professional has, how well employing organizations accept the professional association’s demand for a monopoly on professional knowledge, and the extent to which employers recognize the association’s ownership of the professional jurisdiction.

Worldwide, professional groups have demanded and received recognition of their professional authority in three dimensions: collegial, cognitive, and moral ([House 1993](#House); [Picciotto 2011](#Picciotto); [Smith 1999](#Smith)). Recognized professionals enjoy control and autonomy of professional decision-making in their work ([Abbott 1988](#Abbott); [Freidson 1994](#Freidson1994)) in return for a commitment to providing a quality service that benefits the employing organization. In this connection, autonomy is the right of professionals, as individuals and as a group, to use their own judgement in selecting the relevant skills and techniques to apply based on abstract knowledge and the scientific validity of the profession’s jurisdiction to deal with problems that arise ([Abbott 1988](#Abbott)).

## Quality engineers as semi-professionals

There are three main types of organizations that quality engineers work for. The first type includes organizations working according to government regulations (for example, pharmaceutical companies). In such organizations, the quality manager is involved in almost all processes, enjoys correspondingly high levels of authority (conferred by laws and standards that are clearly defined), and is unlikely to be opposed. The second type includes organizations involved in the food industry and the like. Here, too, the quality manager is involved in many processes and has a strong standing, albeit with less authority than in pharmaceutical companies. Organizations of the third type, namely industrial organizations and service providers, constitute approximately 75 per cent of organizations. In such organizations, the quality manager is often considered a burden and may be ignored or sidelined for business reasons.

Today, the role of the quality manager is one of the most challenging in any organization. Unlike other positions, it is multidisciplinary and requires an understanding of all aspects of the organization’s activities (including, but not limited to, marketing, production, maintenance, and R&D). Therefore, being a good quality manager is no simple matter. The quality engineer is a vital contributor to a company’s commercial success, who, nevertheless, must work to avoid being positioned as an ‘enemy’ or as a control department; rather, the quality engineer should be an important and trustworthy partner in the company’s development and business achievements. In fact,aTo take just one,for a company that does not employ a quality engineer, the cost

The quality manager’s role is to plan and implement control and quality activities, while managing and collaborating with staff in documenting and maintaining organizational quality standards. The role is not only to uphold these and other standards, but to establish and maintain continuous and constant communication with the organization’s employees, lead participation in the maintenance of quality standards, document the quality system’s activities, and conduct quality control to evaluate working methods and identify problems. Thus, the role of the quality engineer in most organizations requires ‘soft skills’ ([Blades, Fauth and Gibb 2012](#Blades)). There is no uniqueness attributed to the required knowledge and, therefore, the quality engineer’s authority stems not from a regulating body but solely from the norms and practices within the employing organization. The status of a quality engineer is determined by the individual’s level of professional knowledge in the field of quality and the extent to which the managers of the employing organization perceive the individual as a professional.

Unfortunately, not many managers think carefully or deeply about quality engineers and their contribution to the organization. Even today there are organizations where the quality manager role is neither a full-time nor a standalone position; instead, it is integrated with another role. Some organizations (especially small and medium-sized ones, which account for a large proportion of the total) outsource quality issues. This has led to a situation where there is no correlation between the skill of an individual quality engineer and his or her success within the organizational culture. This tension, in the authors’ opinion, stems from the low status accorded to quality engineering, which inhibits its institutionalization and prevents it becoming a field where only highly qualified and certified individuals are practitioners.

Globally, the profession of quality engineering and management has not yet been defined ([Abbott 1988](#Abbott)). It is regarded as a ‘profession in the making’, that is, an area still building a clear identity as a professional field of endeavour and attempting to construct the sociological foundations that characterize professionals and provide the basis of their demands for recognition and legitimacy. The lack of institutionalization of the quality profession stretches the boundaries of acceptable standards and safeguards, and this facilitates unethical behaviour by organizations in the field of quality. Furthermore, errors are far more likely when knowledge and understanding of quality are not standardized across a profession and when the public interest is not regarded as a decisive factor in the decision-making of organizational entities.

In Israel, the stringent requirements of quality standards and the tightening of customer requirements have prompted organizations to appoint quality engineers, even when not required to do so. In general, quality systems that are applied in organizations usually operate according to a matrix system. A variety of measures are applied, some of them managerial, others technical or engineering-oriented. Typically, an organizational quality manager and/or a quality engineer are responsible for implementing the requirements of the quality system and ensuring excellence in the organizational units, where, in most cases, theoretical knowledge and qualifications are required. In this context, the quality engineering profession in Israel has grown almost without intervention by the establishment and without the influence of academic experts. This is in marked contrast to what is happening elsewhere in the world, where connections between academia and leaders in the field are in many cases stronger.

# PROFESSIONAL AUTHORITY

## Epistemic authority

The purpose of epistemic authority is to defend the rationality of belief in authority from the modern assumption that the ultimate authority over the self is oneself. Consistent epistemic self-trust commits us to trust in others, and to a belief that some of those others satisfy conditions for trust. The authority and autonomy of professionals derives from the professional knowledge they acquire, from their responsibility for providing services, and from power relations. Knowledge is used by members of a profession as a source of moral, public, and social authority by virtue of the uniqueness and preservation of the knowledge and power they have attained ([Abbott 1988](#Abbott)). The members of the profession unite into a group (a professional community) in which communication takes place among the members. The granting of professional authority is intended to give control and supervisory powers to experts.

Professionals enjoy control and autonomy in professional decision-making in their work ([Abbott 1988](#Abbott); [Freidson 1983](#Freidson1983)) in exchange for a commitment to provide the company (or society more broadly) with high-quality work and, where necessary, to demonstrate a service orientation. Autonomy in this context means that professionals, as individuals and as a group, can rely on their judgement to select the relevant knowledge and methodologies, based on their acquired knowledge, for carrying out tasks and dealing with any problems that develop ([Abbott 1988](#Abbott)).

It has been argued that, to date, there is no uniform pattern of development for professionals. Nevertheless, it can be said that every professional needs the public’s trust, and the more unique the occupation, the more likely it is that the profession as a group will lobby for laws that are exclusive to their professional practice, to ensure that their work is perceived as lawful and is accorded legal rights and independence ([Abbott 1988](#Abbott)).

Abbott (1988) described three arenas in which various professional groups work to validate and promote their claims to being members of a full-fledged profession: the legal arena, the public arena, and the place of work. In Israel, the authority of recognized professionals is anchored in a set of laws (such as the Engineers and Architects Law of 1958 of the Bar Association Law of 1961). Each of these laws uses a different method to define the uniqueness of the profession concerned, and the legislators and the courts set different standards of performance as well as principles, restrictions, ethical prohibitions, and rules of conduct in line with the values deemed unique to the profession.

Abbott defined ‘professional jurisdiction’ in terms of social groups that claim exclusive authority (monopoly) over a particular job and differentiate themselves from other professions ([House 1993](#House)). In this situation, the group’s work is seen as worthy and should only be performed by members of the profession, who, by virtue of their knowledge and authority, enjoy appropriate rights and independence ([Abbott 1988](#_Abbott,_A._(1988).)).

Knowledge and competence in quality oversight can be acquired in two ways: (a) via a non-academic educational track, where the practitioner receives theoretical and practical training, along with practical tools; and (b) via an academic-scientific track, where the practitioner obtains general knowledge alongside the practical means to understand and execute the professional role and to apply professional insight.

The authority given to professions based on the systematic professional knowledge acquired by their members varies by country and is not universal. Some countries recognize the professions in their jurisdictions legally, and others recognize them without a regulator. In Israel, the authority of a profession is anchored in law; there is no law, in Israel or elsewhere, that defines the education that is required of a quality engineer. Nevertheless, the importance of the role requires extensive knowledge of quality, standards, laws, and everything that is required for an organization to meet all of these requirements in the best possible way.

## Organizational authority

Organizational authority refers to the hierarchy in a company from top-level management to entry-level employees. The levels of management that make up organizational authority include the operations-level, middle-level, and top-level management. Organizational authority allows people to take action and make important organizational decisions, and it can be achieved by means of a chain of command, line versus staff authority, delegation of authority, and degree of centralization. Where quality engineers hold organizational authority, they typically do so on the basis of personal and professional relationships ([Ekroni 2012](#Ekroni)).

In conversation, quality engineers from a variety of organizations have noted issues with organizational authority. They routinely experience difficulty in persuading management to work according to the methodology they recommend, and they deal daily with resistance to quality initiatives. As a result, they often have to capitulate to management or at least to broker a compromise. This is closely connected to the fact that the knowledge acquired by quality engineers during their training is based on outdated and irrelevant theories that are more applicable to the Second Industrial Revolution than to current organizational practices. The calibre of academic knowledge in the field of quality is not high, and studies carried out in that field are not accepted in academia as trustworthy.

## Gaps in the authority of quality engineers

It should be emphasized that responsibility for product quality does not rest solely with quality engineers; it involves everyone who participates in the product’s preparation. The responsibility of quality engineers is to know the world of quality, standards, and laws so that the organization can meet the relevant requirements optimally. In this sense, quality engineerschallenges:providing services rather thaningingingsand seekingprovided

When the quality engineer is not perceived as a partner in the organization’s business success, stakeholders do not accord sufficient importance to the demands of the quality engineering unit or personnel. In the Remedia Inc. case mentioned in the Introduction, for example, ‘a quality engineer was not given authority via stakeholders, which caused the company severe financial losses’ ([Ronen 2012](#_Ronen,_Z._(2013).)). The cost of addressing problems after a product or project has been completed is higher than the cost of preventing problems in the pre-production stages.

Although past and present quality engineers would agree that, as professionals, they have the knowledge and authority to do their job optimally, as noted, some organizations appoint employees who lack these qualifications; likewise, some organizations do not ensure that the quality engineer has sufficient authority to carry out the role properly. In many cases, this prevents fully proficient quality engineers from performing their duties appropriately, because they are perceived in their organization as merely responsible for certification (ISO, etc.) rather than as professionals in their field and as partners in the organization’s business success.

Accordingly, minimum threshold competence requirements should be set for candidates for quality engineering positions to ensure that they have the knowledge and skills required. Moreover, quality engineering must be established as a profession that offers commensurate renumeration and prestige. This would grant its practitioners professional authority and expert status in the eyes of all stakeholders, provide them with opportunities to upgrade the standing of the profession, and help them to develop professionally in ways that benefit employing organizations.

Professional expertise, as in medicine and law, is based on a theoretical body of knowledge, a set of skills, and the mastery of appropriate techniques. These tools are acquired in extended studies and in training that includes a long internship, certification, and practical testing in the framework of the ethical code, internal regulations, and disciplinary procedures ([Freidson 1994](#Freidson1994)) of the specific professional association. The more members of the profession possess unique knowledge, the more likely it is that they will demand laws that guard the exclusivity of the professional practice. They will seek to be considered the only ones entitled to engage in this field of activity ([Abbott 1988](#Abbott)).

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Because a quality engineer is an internal assessor, and should be counted as a partner, the work of the individual quality engineer will be more constructive if colleagues perceive it as fully professional and recognize it as expertise. Such acknowledgement of professionalism will generate cooperation and sharing of areas of authority and responsibility. To carry out duties properly and to create a quality system that includes (and will be followed by) all stakeholders, the quality engineer must interact with those stakeholders from a position of professional authority and be involved in all stages of the process.

# EMPIRICAL RESEARCH

## Methods

The empirical part of this study combines two research methods. In-depth interviews were conducted with seven key quality personnel to explore how they perceive their roles, and a questionnaire was used to examine the professional authority of the quality engineer in light of the two senses of professional authority (epistemic and organizational authority) discussed above.

The interviews, which were recorded by the researcher, were semi-structured, and most of them lasted an hour to an hour and a half. Each interview opened with a presentation by the research editor to explain the purpose of the research and its structure. Since the aim was to create an atmosphere of complete openness in which the interviewees would feel comfortable, the researcher summarized the interview data in writing and invited the interviewees to check whether the summaries were accurate. All the interviewees gave their full consent to participate, and their responses constitute a significant contribution to the study.

The interviews were transcribed, coded, and subjected to thematic content analysis to identify patterns within the data and to reveal aspects that emerged in dialogue with the study participants (Braun and Clarke 2006). The content analysis used summaries of quality-peer meetings and interviews, and it focused on thematic analysis with reference to the visible and hidden layers of each text. So that they could challenge the content analysis of the interviews and verify the credibility of the conclusions, the data analysis partners were chosen for their knowledge and experience in qualitative content analysis, although not necessarily in the quality field.

The questionnaire (available in Hebrew at https://bgumanagement.qualtrics.com/jfe

/preview/SV\_43ebG53iRlh52bH) was constructed on the basis of the findings of the interviews and the literature, and its focus was the expertise and authority of the quality manager. It took account of three levels: the structural level (the quality manager’s place in an organization as a member of a profession in the making), the system level (the definition of the job and its requirements as an outline for professional development), and the personal level (professional identity and job perception). Accordingly, it was items , items examining the ptheir within and items collecting b

The questionnaire was administered from November 2015 to April 2017 in an email link sent via the Qualtrics system to potential participants who are quality engineers and managers registered in the EIA database and who attend the main quality conferences. The ages of the participants ranged from 35 to 73. As a non-probabilistic sample was used, it should be noted that the sample is not necessarily representative of all those involved in quality. Nevertheless, the use of the questionnaire gave the study uniformity, as the participants were asked the same questions in the same order, and the closed nature of the items made it possible to draw meaningful comparisons between their responses.

The data analysis was performed using SPSS statistical software. The value of 0.906 for Cronbach’s alpha (which measures the correlation between different items belonging to a particular index in the questionnaire) indicates good reliability and consistency for the questionnaire, linking the statement of reliability to variables related to moral authority (expertise, authority, and work according to professional ethics). Because the use of linear regression would not enable the research questions to be answered, and because the sample size (n = 85) was smaller than the minimum sample size (n = 385), structural equation modelling (SEM) in AMOS software was used. Reliable results were obtained compared to those that would be obtained from regression analysis, and the analysis allowed us to examine the variables ‘expertise’ and ‘authority’.

## Findings

### The knowledge and qualifications of quality engineers

In most organizations, quality is managed by a quality engineer, a professional whose field of responsibility is flexible and whose training is very broad. Although the qualifications required are not defined, there is no doubt that the individual quality engineer faces high and binding expectations.

Two prominent practitioners in the field, Moshe Ekroni ([2012](#Quality50)) and Ehud Gitai (2001), Director of the Quality and Accreditation Division to the Standards Institution of Israel, addressed the issue of the professionalization of quality engineering. They noted three main characteristics of a quality engineer: (a) relevant knowledge in the form of a professional background relevant to the organization; (b) the ability to work on a team, including the ability to establish good communication with all interested parties in the organization; and (c) extensive knowledge of the quality profession. They also said that there should be formal certification conferring a recognized diploma (i.e. Certified Quality Engineer or CQE) ([Gitai 2001](#Gitai)).

In terms of accreditation, the data collected in the present study indicate that most of the respondents believe that, in order to ensure benefit to the employing organization, the position of quality engineer must require a certificate that attests to his or her practical knowledge and professional tools. All the participants in the qualitative part of the study agreed that a quality engineer should have accreditation (among other characteristics). For example, Ekroni (2012) explained that, in principle, ‘in order to ensure that a quality engineering will benefit the organization, the position must be conditioned by accreditation. This means that the qualification will provide him with practical knowledge and professional tools for a reasonable time.’

The interviewees differed as to the type of training (qualification or academic degree) required for the job, with some (Liat Milo, Moshe Akroni, Hanan Malin, and Amnon Margalit) favouring internal training, and others (Dov Peri, Haim Kornfeld, and Dr Abraham Huli) favouring certification by the ISQ.

### The authority of the quality engineer

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Sometimes the lack of expertise of a quality assurance engineer undermines her authority and, hence, her ability to act independently. In addition, there is oftentimes a real contradiction between adherence to quality values (the ethics of those dealing with quality) and the organization’s cost-effectiveness. (Moshe Ekroni)

All the interviewees argued that in light of the differences in the knowledge of those dealing with quality, the quality engineer needs the authority to ensure that recommendations are accepted by the organization and its employees, and to ensure that all areas of knowledge in the organization cooperate with each other. However, according to some interviewees, the quality engineer is often forced to participate in power struggles within the organization:

Keep in mind that the goal of the organization is profits. Quality is not always at the top of the order. Sometimes you’re forced to disqualify products (even if the potential profit is high) that do not meet the specifications. Employees do not always maintain the quality chain when there is a fundamental conflict between efficiency and profits to quality. The role of quality is sometimes perceived as a ‘delaying’ job in the organization, and the inherent tension between operation and quality contributes greatly to this. (Liat Milo)

The interviewees disagreed about the nature of the body that should grant authority to quality engineers. Some (Haim Kornfeld, Dov Peri, Amnon Margalit, and Dr Avraham Huli) thought that the authority should be given by a regulator, and others (Moshe Ekroni and Liat Milo) that the professional organization should help management of the employing organization to internalize the importance of quality management and encourage the building of a supportive organizational culture. The questionnaire responses also suggested that professionalization in the field of quality should confer on its practitioners a ‘collegial authority’ of the type that exists in other recognized professions (such as medicine, law, and academia).

### Tensions and conflicts in the role of the quality engineer

Some of the interviewees (Liat Milo, Moshe Ekroni, Dov Peri, and Haim Kornfeld) noted the existence of limitations and barriers to the job. Others said that the restrictions and barriers depend on the organization (Amnon Margalit) and whether, for example, it prioritizes marketing at the expense of quality (Liat Milo) or appeals to the quality engineer’s lack of authority.

For example, Amnon Margalit said, ‘I often experience a clash between the realization of quality solutions and the time of delivery of a system to the customer.’ These barriers can limit his authority and impair his ability to perform his duties as a partner in the organization’s business success. As for the claim of duality in the quality manager’s role (vis-à-vis the organization versus the customer), the interviewees agreed that, although quality engineers themselves do not see a duality, other stakeholders insist that it exists. Quality engineers see their role as helping to sustain the organization.

From the interviews, it emerged that a quality engineer must adapt procedures and work instructions to regulations and standards, and must make these accessible to all other employees through management. Sometimes the achievement of this goal is thwarted by the quality engineer’s lack of knowledge, and sometimes by a lack of authority that results in the non-cooperation of other workers with the quality engineer:

Failure to address quality in one of the organizations caused financial losses, due to the lack of expertise of the quality manager. In an appeal to another quality engineer in the same organization to examine the problem and try to help, a lack of cooperation with the stakeholders was found, which made the decisions negligible (in my opinion, an excess of ego and blame) … Cooperation was only reached after the workers realized that they were beginning to lose their jobs, which eventually led to the resignation of the CEO. (Dov Peri)

A few years ago, I initiated and led a comprehensive organizational analysis of one of the business divisions, and this was not welcomed because I pointed out [that] resolving problematic issues (in my opinion) would cause significant changes. After the management understood the value of the process, it mobilized and made changes across the division in order to address a significant portion of the issues that arose. (Moshe Ekroni)

The analysis of the interviews thus supported the insight that the expected degree of success of the quality engineer is related, among other matters, to the manner in which the other stakeholders in the organization perceive the role.

## Discussion and conclusions

This study examines the professional status of quality engineers based on the experience of quality practitioners as professionals in the context of two key terms: expertise and authority. On the one hand, the professionalism and expertise of the quality engineer are neither fixed nor uniform; on the other hand, the authority of the quality engineer in the hierarchical structure is unclear.

The activities mentioned as falling within the scope of the role of the quality manager (promoting quality and excellence in the organization; instilling a culture of quality among all stakeholders; leading change and improvement with an emphasis on changes in process infrastructure and management routines; and taking responsibility and authority to bring significant added value to the organization) can be understood as what Giddens (1984) characterized as conscious actions carried out by agents that cause a change in the social structure through the process of construction. Giddens’ structural theory assumes that the agents who carry out the processes are internally motivated and aware of the results they wish to achieve through their actions. In terms of quality managers, their motivations are known not only to themselves but also to those around them. These agents, however, are not equal in the construction process, as Giddens (1984) supposed, a fact reflected in the responses analysed in this study.

The findings also reveal that the main obstacle facing quality engineers is the desire of the organization to maximize its profits in the short term, even at the expense of deviations from quality. Another barrier is the image many organizations have of quality engineering as obliging other workers to engage in a lot of paperwork, an image which makes it difficult for those involved in the field to establish proper working relations and authority. It was also found that certain characteristics of Israeli society cause other stakeholders to challenge the quality manager’s opinion, thereby impairing the performance of the quality manager’s duties, limiting his or her authority, and demonstrating a lack of willingness to acknowledge him or her as a partner in the organization’s business success. These deficiencies often cause tensions and conflicts between the quality engineer and other stakeholders in the organization.

When they were told that, according to the literature, the granting of professional rights and recognition of quality engineering expertise is the means to strengthen the status of those engaged in quality and ensure that they have the authority they need ([Abbott 1988](#Abbott)), not all of the interviewees agreed. Some believed that authority should be given to quality practitioners by the regulator, granting them the status of professionals. However, others thought that authority should be given by the workplace. Both the interviews and the survey responses show that the status of a ‘profession in progress’ prevents quality engineers from being recognized as experts in their field and creates tension between expertise and authority. This situation requires every quality engineer to establish their own status in the employing organization based on the relationships they build with interested parties. This can be a lengthy process, especially as carrying out the duties of a quality manager, however effectively, does not usually produce immediate results.

The research assumption of the present study, in line with the literature, is that many professions define requirements for training, education, and qualification in order to distinguish between workers with general qualifications, practical knowledge, and experience and those with certified qualifications, theoretical knowledge, and higher education in the field. Training requirements are often a condition of engagement, and violation of those requirements may be accompanied by sanctions prescribed by law to maintain social order ([Giddens 1984](#Giddens)).

However, not all of the concepts that Giddens coined are consistent with the findings of this study. For Giddens, the social system differs from the social structure in that, while the social structure is amorphous and constantly changing in space and time through the action of agents, the social system is constant in time and space and cannot be changed. In addition, while the action of the individual is embodied at a certain point in time of the social structure, the system is a separate entity from the agent, and it is influenced from the outside. In terms of quality practitioners, the nature of the quality manager’s role in all organizations is constant and involves carrying out measurement and evaluation tasks and tasks aimed at making the company profitable. This activity varies from one organization to another, and is, therefore, not carried out consciously or automatically. No uniform rules (behavioural structure) are created. It is routine activity that creates the social structure, and the social structure limits the individual’s behaviour because it is based on the laws of behaviour ([Giddens 1984](#Giddens)).

It should be noted that the interviewees believe that a professional society should act to improve the quality engineer’s position of authority, helping the management of organizations to internalize the importance of quality management and to promote a supportive organizational culture. A further suggestion was that professionalization of the field of quality would give practitioners in the field ‘collegial authority’ similar to that enjoyed by the professions (medicine, law, engineering, etc.) ([House 1993](#House)).

## Limitations and practical implications

Being a quality engineer requires mastery of professional and organizational knowledge and skills. If those engaged in the field undergo long-term training and dedicated specialization, they will be able to carry out their duties properly. The boundaries of the job will become clear, and there will be a justification for institutionalizing the profession on a national level. However, the findings of this study show that the quality profession is perceived in a comprehensive and broad manner that fails to distinguish between different areas of quality. We therefore believe that further research is required regarding the influence of expertise on the authority of a quality engineer in all areas of knowledge; such research would contribute greatly to advancing the issue and would encourage industry leaders to act according to clear policy and systematic methodology.

The present study has limitations that prevent the generalization of its conclusions to everyone dealing with quality in Israel and throughout the world. First, the respondents were not selected at random from the population but consisted of volunteers who responded to contact. Second, the sample in the quantitative part of the research is homogeneous in several parameters. All the respondents are veteran quality practitioners, and almost all are members of the Israeli Quality Association, which affects their position in the field. Finally, it should be noted that the research was conducted over a period of two years, during which changes may have emerged that are not reflected in the findings.

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