**Marta Moczulska**
**Piotr Rogala[1]**

# MAPPING COMPETENCES FOR THE ISO 9001 MANAGEMENT REPRESENTATIVE

*Abstract: The purpose of the research was to identify and rank a set of competences, which should be mastered by a person responsible for an ISO 9001 quality management system to fulfill her/his tasks effectively. The competences were verified at the second stage of the study, during interviews with managers, who are experts in ISO 9001 quality management system. The paper highlights the importance of attitudes. The necessity to develop interpersonal competencies among management representatives is also revealed. Additionally, it was found the relatively little importance of knowledge about studying the needs and customers satisfaction and relatively little importance of knowledge about ISO 9000 series of standards (beyond the ISO 9001 standard). Further empirical studies are needed. The study may have some implications relative to the design of curricula for the preparation of people to this function.*

*Keywords: Competences; Management representative; ISO 9001; Quality management system*

## 1. Introduction

There are over one million organizations in more than 170 countries with a quality management system (QMS) certified against ISO 9001 requirements. Therefore, it is not surprising that QMS is the subject of numerous studies and scientific papers. Most of them aim at defining the effects resulting from the implementation of this system, in particular benefits (Lee et al., 1999; Sampaio et al., 2011; Casadesús et al., 2001; Wu & Jang, 2014; Fotopoulos et al., 2010; Dias & Heras 2013; Fonseca & Domingues 2016; Shaharudin et al., 2018).

Even though there is a huge number of publications describing the benefits of implementing a quality management system (Fonseca et al., 2017a), it is still necessary to continue studies on the matter. It results from

the complexity of the issue which is exemplified by numerous factors that influence the success of a quality management system (for example, different types of internal and external motivations, for implementation of QMS (Castillo-Peces et al., 2018)) as well as the scope and kind of the received benefits. For example, the review of 82 scientific publications carried out by Tari et al. (2012) proved that the benefits of the QMS are concentrated in the 13 areas. It is also worth noticing that studies are indicating various limitations and drawbacks associated with the performance of QMS.

Less attention has been paid to factors influencing the effectiveness of the implementation as well as the maintenance and improvement of the QMS. Research on this subject has been carried out among others by Wahid and Corner (2009), Wardhani et al.

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[1] Corresponding author: Piotr Rogala
   Email: piotr.rogala@ue.wroc.pl

(2009), Criado and Calvo-Mora (2009), Psomas et al. (2010), Kammoun and Aouni (2013), Ismyrlis et al. (2015). In most of them, it was demonstrated that management commitment and leadership should be considered as the critical success factor. The crucial significance of this factor has also been reported in the case of other (non-ISO 9001) initiatives related to quality management — QM (e.g. Waldman, 1993; Warwood & Roberts, 2004; Ahmad & Elhuni, 2014) and management in general (e.g. Yukl, 2008). In the light of these constatations, it should be surprising that researchers seem to have shallow interest if any at all in the position of management representatives (MR). Despite the frequently repeated view that the MR's role is tantamount to the success or the failure in establishing, implementing and maintaining a QMS (Gaal, 2001), little attention is paid to this topic in the literature. There is no information concerning, among others, the tasks they execute in practice, their competences, the method used to select them for the performance of their functions, as well as the problems they encounter in their everyday activities.

The authors fill the gap in the field of the competence of the MR. A research question was formulated: *what competencies are crucial for a management representative to effectively perform their tasks?* The objective of this study is to identify and rank a set of competences which should be mastered by those responsible for the QMS to effectively fulfill their tasks.

This paper is divided into four parts. The section 2 presents the theoretical background to discuss and explore the way the research problem has been dealt with in contemporary literature. The next section the research methodology, including the conceptualization, sampling and data collection. Section 4 is the presentation of the findings. The final part discusses the results, identified limitations and recommendations for future research.

## 2. Literature Review

In the paper, the authors focus on the competence of an MR. Using EDS MultiSearch engine, in November 2015, they carried out an extensive review of the scientific literature. Following the criteria for this kind of research (White & Schmidt, 2005), the title included the following words „management", „quality" and „competence" which resulted in receiving 66 publications. The results were limited to scientific articles, reviewed (30), with the right subject (e.g. removing those concerning chronic diseases, asthmatics, clinical pathology — 15) and finally those in English (11). It was found out that the researches (9 articles) had concerned: specific kind of competence (Pérez-Aróstegui et al., 2013; Wang, 2014), the link between competence and results concerning quality (Parumasur & Govender, 2009; Naz'aina, 2015), or the possibility to develop competence (Paruma-sur & Govender, 2009; Ruddlesdin et al., 2010; Tongsamsi & Tongsamsi, 2015). Only one publication concerned the definition of competencies related to QM, specifically proposing an evaluation method (Escrig-Tena & Bou-Llusar, 2005). However, the authors verified the competence of the organization, not the employee. It is worth remembering that the reviewed articles do not always provide a description of what competence is and also they use different views of competence.

Parasurman and Govender (2009) selected eight competences based on eight activities of a manager, mentor, facilitator, monitor, coordinator, director, producer, broker, and innovator. In their research, they proved the significance of interpersonal relations, including cooperation with other workers for QM. Tongsamsi and Tongsamsi (2015) included such competences as understanding indicators and evaluation criteria, managing the system operation, motivating others to initiate quality provision in the firm, preparing a report, comprehensive understanding of the organization, and coordination. At the same time, they focused

on the influence of training and management on the competencies for QM. Escrig-Tena and Bou-Llusar (2005), based on four areas (client orientation, continuous improvement, staff satisfaction, organization), selected nine organizational competencies: leadership, enacting organizational environment, employee know-how, skills for external cooperation, creation of a collective mind, organizational commitment, stimulation of the organizational learning process, speed and flexibility in designing new products or services and reputation. They studied their impact on performance. It may be concluded that there is a lack of research identifying the competences of people who manage quality.

The notion of competence is not explicit (Gianluca & Alessandro, 2015). Many terms exist, which are used as synonyms (Di Leonardi & Biel, 2012). While analyzing the content of the available definitions, two main approaches may be distinguished (Winterton, 2009): American ("competency") and British ("competence"). The first one can be described as employee-oriented (Sandberg, 2000). As described by McClelland (Eurat, 1998), competencies are the "underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job situation". In this perspective, character-ristics, motives and own perception become crucial (Bloom, 1956; Athey & Orth, 1999; Boyatze, 2011). The researchers indicate its basis as self-confidence, control over emotions and interpersonal skills. Bloom (1956) compares them to three areas: cognitive, emotional and psychomotor. The first is concerned with mental skills (such as critical thinking, spatial thinking, analysis and synthesis, concluding). The second is connected with feelings and attitudes (persistence in pursuit of goals despite failures, identifying emotions and controlling them, not succumbing to bad moods), while the third one - with manual and physical skills (as a method of execution, including efficiency, speed, accuracy).

The second approach is based on work. According to Mansfield (2005), competence is "being able to perform 'whole' work roles (perform - not just know about - whole work roles, rather than just specific skills and tasks); to the standards expected in employment (not just 'training' standards or standards divorced from industrial reality); in real working environments (i.e. with all the associated pressures and variations of real work)". This refers to the achieved outcomes, and thus to the level of work performance setting the standards. Competence levels are determined based on the analysis of the description of: (Lester, 2014): tasks and their parts, job functions and specific activities within them and broad functions and key activities within them.. It should be noted that knowledge is not limited in this approach to qualifications, proved by a diploma, but is also perceived through the prism of application in practice, under specified conditions (of the organisations).

Notwithstanding the approach, competencies consist of knowledge, skills, and attitudes. Significant features of competences include a connection with tasks. Considering that having a high level of capabilities is not necessarily tantamount to being competent and suddenly these capabilities determine the difference in the level of execution, it can be stated that competences should be regarded in a complex way (Baláž & Kika, 2007). The paper takes account of a holistic model of competences, created by Cheetham and Chivers (1996), which – in the opinion of the article's authors – combines the essence of the two approaches presented (Figure 1).

This model includes four elements: (1) knowledge understood as qualifications, (2) functional competence - related to the ability to apply knowledge in practice, (3) personal competence - skills in interpersonal contacts and (4) values (ethical competence), which relate to the employee as a person, affect his behaviour and way of working.

| Knowledge | Functional competence | Personal competence | Values competence |
|---|---|---|---|
| ↓ | ↓ | ↓ | ↓ |
| • technical /theoretical <br> • tacit/practical <br> • procedural <br> • contextual | • occupation-specific <br> • organizational /process <br> • cerebral <br> • psychomotor | • social /vocational <br> • intra-professional | • personal <br> • professional |

**Figure 1**. Holistic competence model
Source: own study on the basis of Cheetham and Chivers (1996)

## 3. Research Methodology

Due to the described lack of research on the competence of a QM, the research issue was formulated as follows:

*What competencies do a management representative need to perform their tasks effectively?*

The research is divided into two stages (Figure 2):

Stage 1: Operationalization– an analysis of the tasks performed by an MR and definition of a set of competencies necessary to perform this function.

Stage 2: Verification and assessment of the significance of the competences.
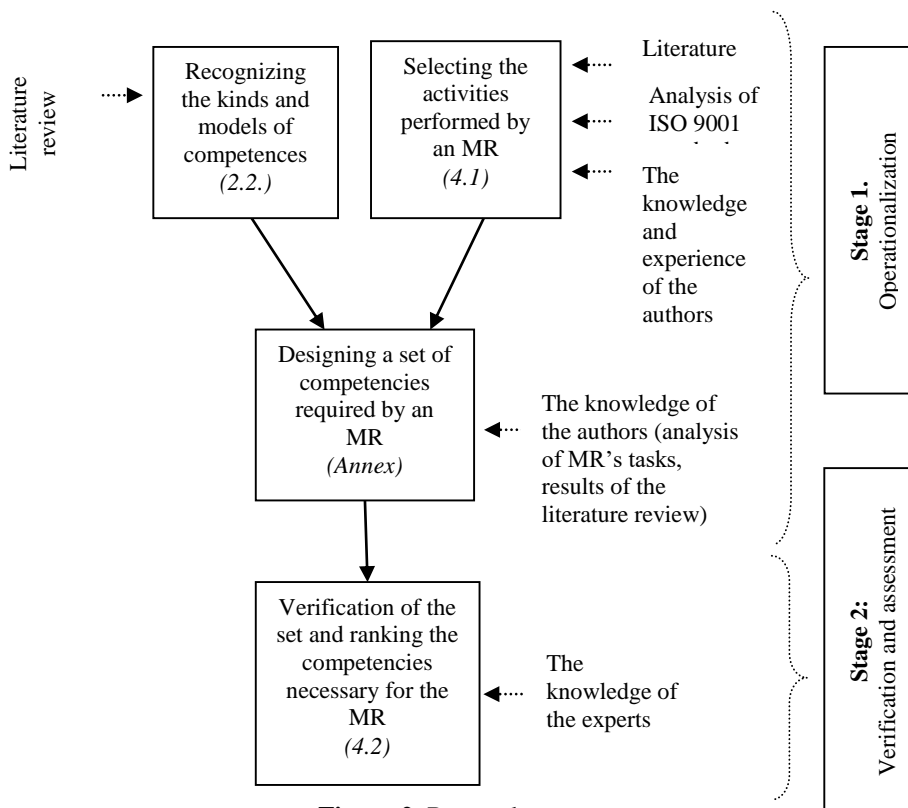


**Figure 2.** Research stages

The starting point in the process of formulating a set of competencies which an MR needs were the analysis of the content of ISO 9001: 2008 standard, as well as professional literature, describing the tasks of an MR. It should be noted that:

- The publications in this field do not provide a precisely defined and commonly accepted approach. Practical solutions differ significantly from one another in different organizations;
- The tasks of an MR are not formulated based on empirical research but based on the opinions of authors, which usually based on their experience as a consultant or an auditor.

This analysis led to the development of 13 key tasks of an MR. Then, the authors of the study, based on the literature, adjusted the competencies necessary — in their opinion — to perform each of these tasks (Annex). This led to suggest a total of 39 competences. The set of competencies prepared in this way was presented to two MR from the different companies. Each of them was interviewed separately. They were asked to evaluate the set of competences. The result of the consultation was the introduction of clarity of the wording.

An appropriate questionnaire was prepared. The identified competencies were grouped into four areas: knowledge, functional, personal and values competences. The experts were to evaluate the importance of having each of the competencies mentioned above, from the effectiveness of the QMS. It used a Likert's 5-grade scale.

Taking into account the purpose of the research, the following assessment of the significance level of the surveyed competences was established according to the following thresholds:

- Above 4.0 - very significant.
- Above 3.0 to 4.0 – significant.
- Above 2.0 to 3.0 – minor significance.
- 2.0 or less– irrelevant.

Taking the exploration character of the research into consideration (Babbie, 2004), it was decided to use P. Drucker's creative imitation approach. The organizations which had won the Polish Quality Award (PNJ) were adopted as model organizations. The award is granted to organizations operating in Poland, which, based on the analysis of their compliance to the criteria of the EFQM Excellence Model (see Para-González et al., 2016), are recognized as the best (in terms of quality management) in a given year. Every organization had a quality management system meeting the requirements of ISO 9001. Receiving such award means that, having taken into consideration objective criteria, the external committee decided that the organizations have a mature and successful system of quality management. Judging from this, it may be claimed that the people responsible for running the systems (i.e. Management Representatives) are competent and can be referred to as experts.The research questionnaire was addressed to them.

The research included the winners of the year 2014 – 6 organizations and 2015 - 4. The Management Representatives from six organizations agreed to participate in the surveys (see Table 1).

All experts are university graduates with 4 (67%) in technical studies, and 2 (33%) in management and administration. It is noticeable that all experts completed an internal auditor course. Half of them completed an external auditor course as well. All of them continuously improve their knowledge of quality management by participating in conferences, workshops and study visits to other organizations. The age of the respondents varied: two were above 50, two in their forties while one was below 30 years old. Their work experience was at least ten years long while the time in the post of a management representative was at least four years.

**Table 1.** Organizations participating in the surveys

| No | Name of organization | Type of organization | Sector | Industry | Year | Award category |
|---|---|---|---|---|---|---|
| 1 | 3M Wrocław, Poland | Production activity | private (market companies) | innovation for: automotive electronics energy health care manufacturing mining, oil & gas safety and transportation | 2015 | production and service organizations (large-sized company) |
| 2 | Agencja Rynku Rolnego (Agricultural Market Agency) | Government public organization | public | agricultural | 2014 | public govern-ment organizations |
| 3 | Brökelmann, Poland | Production of equipment and devices made of stainless steel | private (market companies) | steel | 2014 | production and service organizations (medium-sized company) |
| 4 | Urząd Miasta Krakowa (Cracow Municipal Office) | Public administer-ation | public | administration | 2014 | public self-govern-ment organizations - office |
| 5 | Mando Corporation | Production of parts for mechanical vehicles | private (market companies) | automotive | 2015 | production and service organizations (medium-sized company) |
| 6 | Wojewódzki Szpital Specjalistyczny nr 5 im. św. Barbary (Saint Barbra Voivodeship Specialist Hospital no. 5 in Sosnowiec) | Hospital | public | health care | 2014 | public organizations - health protection |

## 4. Results and discussion

### 4.1. Identification of management representative competences

The information regarding detailed tasks performed by management representatives is not formulated based on empirical research, but based on opinions of their authors, based on different premises, most often profession-

nal experience related to working as a consultant or auditor. As a result of the analysis of publications of this type (Gaal, 2011; Hoyle, 2011; Sikora et al., 2011; Tricker, 2010; Cimatti, 2016), a set of 13 key tasks was created. It includes:

- Cooperation with:
  - T1. external consultants and trainers,
  - T2. top management,
  - T3. middle-level management.

- Supervision over:
  T4. activities scheduled during management review,
  T5. fulfillment of the customer's requirements, that are disseminated in the organization,
  T6. implementation of designated quality goals,
  T7. execution of corrective and preventive actions,
  T8. purchases (supply).
- Contacts with:
  T9. a certifying institution,
  T10. other external interested parties (associations, trade organizations, etc.).
- Ensuring:
  T11. that the processes necessary in the QMS are established, implemented and maintained,
  T12. the integrity of the QMS by undertaking appropriate actions,
  T13. managing a team of internal auditors.

The authors performed an analysis of each task to define the competences. They pointed out the roles involved in fulfilling them. They also stressed the knowledge, skills, and approaches necessary to fulfill them (see Annex), taking into consideration the up-to-date though few publications on the matter.

It may be concluded that one of the most important dimensions of the activities of an MR is cooperation — both outside and within a company.

The first group consists of customers. Bearing in mind their satisfaction, an MR should engage in systematic recognition of their needs and analyze the obtained information (T5). They should know about conducting research and be able to apply it in practice.

The second group consists of external auditors. MR not only organizes audits but also may participate in them as an observer. On the one hand, receiving critical comments is useful for improvement of the QMS, while on the other hand — skillfully presenting the

position of the company (T9). It is not possible without the knowledge of the binding ISO standards from the 9000 series, the processes occurring in the organization of the representative, the principles adopted in it, as well as the ability to actively listen and be patient.

The third group consists of consultants and trainers, whose actions should support the company in improving the QMS. The MR finds partners in this respect and assesses their work (T1). He should enforce the implementation of jointly set goals, tasks, and terms of cooperation. It is necessary to be equipped with knowledge of the advisory market, critical thinking, analytical negotiation, and problem-solving skills, as well as persistence and self-confidence.

The fourth group includes various kinds of entities interested in QM, including associations and industry organizations (T10). Cooperation with them may support the MR in the execution of their assigned tasks (Parumasur & Govender, 2009). This is tantamount to reciprocity - sharing the possessed knowledge and maintaining the confidentiality of some information. During contacts, the representative serves as a link between the company and the groups described above, as well as, the company's spokesperson, affecting its image.

While considering the shaping of cooperation within the company, and being aware that the effectiveness of QM requires the participation of all employees, it is worth emphasizing the importance of their commitment to:

- The implementation of the requirements encouraging customer satisfaction.
- Achieving the set of goals concerning quality.
- Compliance with procedures and instructions.
- Introduction of changes related to the improvement in processes.

For the MR, this is tantamount to undertaking actions related to (T4, T5, T6, T7, T11): (1) triggering awareness of the importance of

QM, (2) dissemination of knowledge about the QM processes, (3) customer needs, (4) formulating goals and their decomposition into different units, (5) supporting and (6) monitoring the effectiveness of their implementation in order to (7) determine the possibility to improve processes, which involves (8) solving problems and/or (9) introducing changes. This task requires a person with extensive knowledge of all the QMS components, quality tools and techniques, who can bring all these together to ensure that the QMS is working effectively (Imler, 2006). The MR becomes the link between management and employees (Zelnik et al., 2012), the allocator of resources, the change agent – who demonstrates the ability to carry out changes (Nanda, 2005), and the management coach (Tricker, 2010), who stimulates development.

In order to fulfill these roles, this person should be familiar with the principles and regulations binding on the company, have knowledge of the management areas related to goals setting, introduction of changes, conflicts, as well as interpersonal skills with concerning communication, influencing other people and negotiation (Parumasur & Govender, 2009). Thus, it can be specified that the MR should have interactive communication and initiating skills, which requires self and other's evaluation (Shipper & Davy, 2002; Blašková, 2009).

The management representative should ensure the determination of the require-ments concerning suppliers and determi-nation and application of relevant procedures of delivery evaluation - including the conduct of audits of the other party (T8).

Taking account of the integrity of the QMS, attention should be paid to the knowledge of the ISO standards, as well as cooperation within the organization (T12). Since the management representative establishes and manages the team of internal auditors, it seems that cooperation with them should be easier. But, the performance of this function includes — putting it simply — planning, organizing, motivating and controlling, and thus requires competences suitable for managers (T13). It should be noted that auditors belong to organizational units and adequately perform tasks associated with their position (Nanada, 2005), for which they are accountable to their superiors. To maintain their activity, the MR should support them. In this respect, it is worth pointing out the tasks of the team leader and the related skills (Chmiel, 2003):

- Team management means setting clear objectives, specifying the roles of team members, assigning tasks, assessing the contribution of individuals in the team's work, feedback on the level of work performance, verifying processes, objectives.
- Coaching through listening, recognizing, conveying feelings.
- Leading, namely creating conditions favourable for a high level of task performance, creating and maintaining the team as an effective whole.

As a result of the analysis of the tasks of MR about cooperation with top management, it can be stated that they consist, first of all, of discussing the issues concerning the operation of QMS (T2). It is worth completing useful skills with the presentation of issues, information transfer or organization of meetings. However, it should be noted that the organization of meetings means getting the attention and interest of people, who - due to their position in the organization - often have limited available time. It requires determination, focuses on reaching the goal as well as assertiveness and self-confidence. Similar attitudes can be favourable for cooperation with middl -level managers (T3). They should accept responsibility for quality in the departments managed by them. At the same time, this task - as an additional one - may not be considered a priority, and supervision may be perceived as "meddling". Therefore, it is important to acquire support for QM of this group of employees, maintain

their commitment and competently verify activities. The situation applies to managers, and thus common decision-making may be considered.

MR performs the task described above, irrespective of all other duties, since this function may be - and often is in practice - connected with other tasks. Typically, the MR role is performed by the organization's senior quality officer, such as Vice President of Quality or Director of Quality (Nanda, 2005). Therefore, it is assumed that a good MR should be a person who (see: Parumasur & Govender, 2009; Wiszejko-Wierzbicka, 2012):

- pursues goals together with others (establishing contacts, interde-pendencies in action),
- manages the actions of other people (plans, inspires, influences),
- uses personal rights without breaching the rights of others,
- resolves conflicts (relations, data, interests, structure, value),

and thus be characterized by the competences, accordingly: leadership, cooperation, and assertiveness. These are complex social competences, (Matczak, 1994), which require an understanding of other people, control of emotions, and sharing information.

In total, 39 competencies were identified (Table 2).

**Table 2.** Competencies of the MR for the ISO 9001 quality management system

| Knowledge | Functional competence | Personal competence | Values competence |
|---|---|---|---|
| K1. QM – principles, methods, techniques<br>K2. ISO 9001 standard<br>K3. ISO 9000 series of standards<br>K4. Methods of studying needs, the satisfaction of customers<br>K5. Setting goals, monitoring their achievement<br>K6. Process management<br>K7. Organization of supply and methods of supply control<br>K8. HRM<br>K9. Change management<br>K10. Conflict management<br>K11. The functioning of the organization<br>K12. Functioning in the organization industry specification<br>K13. Advisory and training market | F1. Drawing up QMS documentation<br>F2. Analysis of information and formulating proposals forimprovement activities<br>F3. Organizing, chairing meetings<br>F4. Conducting improvement activities<br>F5. Organization of audits<br>F6. Organization of training<br>F7. Public speeches | P1. Active listening<br>P2. Assertiveness<br>P3. Consistency<br>P4. Self-confidence<br>P5. Openness<br>P6. Influencing others<br>P7. Analytical thinking<br>P8. Critical thinking<br>P9. Creativity<br>P10. Communication skills<br>P11. Cooperation<br>P12. Diagnosing, naming and controlling emotions | V1. Honesty<br>V2. Patience<br>V3. Perseverance<br>V4. Respect<br>V5. Responsibility<br>V6. Reliability<br>V7. Involvement in QM activities |

The reliability of the questionnaire was tested statistically. The internal consistency reliability indicator (Cronbach alpha) for the study was 0.94 so the reliability coefficient of the study variables exceeded the minimum acceptable level of 0.7, which concurs with the suggestion made by Nunnally and Bernstein (1994).

### 4.2. Evaluation of management representative competences

Experts recognized ten out of thirteen studied areas of knowledge as very significant for the effectiveness of the QMS. The highest average score (4.83) was given to the knowledge of (Table 3): process management (K6), change management (K9) and functioning of the organization they work in (K11). Knowledge concerning the setting and monitoring goals (K5) received a slightly higher average than the knowledge of ISO 9001 standard (K2), the specific nature of the industry (K12), knowledge concerning the principles, methods and techniques of quality management (K1), conflict management (K10) and personnel management (K8). The respondents evaluated that the knowledge of the methods to identify the needs and satisfaction of customers (K4), as well as the organization of supply and control of delivery (K7) is less significant. Among the competencies recognized by the experts as the least significant was the knowledge about the advisory and training market in quality management (K13) and others, i.e. beyond ISO 9001, ISO 9000 series of standards (K3). It is worth noting that the last area of knowledge (K3) was assessed in the same way (3 - of medium significance) by half of the respondents (MR1, MR5, MR6). Similarly, the degree of importance of two persons (MR1, MR6) allocated to the knowledge of the methods to identify the needs and satisfaction of customers (K4), and the organization of supply and control of delivery (K7).

**Table 3.** Knowledge

|  | K1 | K2 | K3 | K4 | K5 | K6 | K7 | K8 | K9 | K10 | K11 | K12 | K13 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MR1** | 4 | 3 | 3 | 3 | 5 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 4 |
| **MR2** | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 |
| **MR3** | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 4 |
| **MR4** | 5 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 5 | 4 |
| **MR5** | 4 | 5 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 |
| **MR6** | 3 | 4 | 2 | 3 | 5 | 5 | 3 | 4 | 5 | 3 | 5 | 3 | 2 |
| **Average** | 4.33 | 4.50 | 3.67 | 4.17 | 4.67 | 4.83 | 3.83 | 4.33 | 4.83 | 4.33 | 4.83 | 4.50 | 3.67 |

The experts found the following functional competencies as very significant (Table 4): analysis of reports, indicators, information and formulating proposals of improvement activities on this basis (F2), as well as conducting improvement activities/projects (F4), the ability to conduct audits (F5), drawing up and supervising the quality management system documentation (F1), organizing training (F6) and giving public speeches (F7). It should be added that the first two of them received the highest average. The respondents considered organizing and chairing meetings (F3) as less significant competence.

It is worth noting that two respondents (MR4, MR6) evaluated it below the value awarded by other people - at 3 and 2 points (on average and not significantly). The MR6 expert assessed it similarly as the ability to conduct audits (F5) and pointed drawing up and supervising the quality management system documentation (F1).

**Table 4.** Functional competences

|  | F1 | F2 | F3 | F4 | F5 | F6 | F7 |
|---|---|---|---|---|---|---|---|
| **MR1** | 4 | 5 | 5 | 5 | 4 | 4 | 5 |
| **MR2** | 5 | 5 | 5 | 5 | 5 | 5 | 4 |
| **MR3** | 5 | 5 | 4 | 5 | 5 | 4 | 5 |
| **MR4** | 5 | 5 | 3 | 4 | 5 | 4 | 4 |
| **MR5** | 5 | 5 | 4 | 5 | 5 | 5 | 4 |
| **MR6** | 2 | 4 | 2 | 5 | 3 | 4 | 4 |
| **Average** | 4.33 | 4.83 | 3.83 | 4.83 | 4.50 | 4.33 | 4.33 |

Also, most of the researched personal competencies were recognized by experts as very significant (Table 5). Among them -

adequately to the resulting average - there are four groups of competences. The first (4.83) included skills related to active listening, used to understand other people (P1) among others, assertiveness (P2) and analytical thinking (analyzing, concluding - P7). The second group (4.67) included consistency (P3) and cooperation, understood as establishing contacts, maintaining relations (P11). The third group (4.5) covered critical thinking (P8) and communication skills, including sharing information, views, the ability to express opinions and formulate messages (P10). The fourth group (4.33) consists of self-confidence (P4) and creativity (P9). According to the opinion of respondents, the significant personal skills include the ability to influence other people (P6), and the sixth - openness, which means,

e.g. receiving criticism based on facts (P5) and diagnosing, naming and controlling emotions, both their own as well as other people's (P12).

In case of personal competences, it can be emphasized that four of them: consistency (P3), influencing others (P6), analytical thinking (P7) and diagnosing, naming and controlling emotions (P12) were equally evaluated by the majority of respondents (MR1-MR5). Covered critical thinking (P8) was evaluated as medium significant by MR4. MR6 evaluated the significance of five competencies lower than other experts: included consistency (P3), self-confidence (P4), openness (P5), creativity (P9) and diagnosing, naming and controlling emotions (P12).

**Table 5.** Personal competences

|        | P1   | P2   | P3   | P4   | P5   | P6   | P7   | P8   | P9   | P10  | P11  | P12  |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|
| **MR1** | 5 | 5 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 |
| **MR2** | 5 | 4 | 5 | 4 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 4 |
| **MR3** | 5 | 5 | 5 | 5 | 4 | 4 | 5 | 4 | 5 | 5 | 5 | 4 |
| **MR4** | 4 | 5 | 5 | 5 | 4 | 4 | 5 | 3 | 4 | 4 | 4 | 4 |
| **MR5** | 5 | 5 | 5 | 5 | 5 | 4 | 5 | 5 | 4 | 5 | 5 | 4 |
| **MR6** | 5 | 5 | 3 | 3 | 2 | 4 | 4 | 5 | 3 | 4 | 5 | 3 |
| **Average** | 4.83 | 4.83 | 4.67 | 4.33 | 3.83 | 4.00 | 4.83 | 4.50 | 4.33 | 4.50 | 4.67 | 3.83 |

The experts considered all of the researched values, as very significant (Table 6). The unanimity of the respondents in grading honesty (V1) is also worth pointing out, which, due to the value of the assessment - 5 - can be considered as an attitude characterizing MR. Other values competences: perseverance (V3) responsibility (V5), obtained an average at the level of 4.83. Respect for others (V4), reliability (V6) and commitment in actions within the scope of QM (V7) – 4.67, while "patience" (V2) – 4,17. MR6 was the only expert who assessed this value (V3) as of medium significance.

**Table 6.** Values competences

|        | V1   | V2   | V3   | V4   | V5   | V6   | V7   |
|--------|------|------|------|------|------|------|------|
| **MR1** | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **MR2** | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| **MR3** | 5 | 4 | 5 | 5 | 5 | 5 | 5 |
| **MR4** | 5 | 4 | 5 | 4 | 4 | 4 | 4 |
| **MR5** | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| **MR6** | 5 | 3 | 4 | 4 | 5 | 4 | 4 |
| **Average** | 5.00 | 4.17 | 4.83 | 4.67 | 4.83 | 4.67 | 4.67 |

The obtained results were subjected to statistical analysis (applying SPSS software). First, a test of competent judges at Kendall was carried out (see table 7). Due to the small number of experts, the Cronbach's Alpha test ratio was not calculated. Due to the lack of consistency, four variables were removed from the further analysis (K13, P5, P12, and V2).

**Table 7**. Coefficients of compliance of the test of competent judges at Kendall

| | The name of areas (variable name) | The code | Compliance result |
|---|---|---|---|
| Knowledge | QM – principles, methods, techniques | K1 | Kendall's W = 0.230; p=0.174 |
| | Standards ISO 9001 | K2 | |
| | ISO standards of series 9000 | K3 | |
| | Methods of studying needs, the satisfaction of customers | K4 | |
| | Setting goals, monitoring their achievement | K5 | |
| | Process management | K6 | |
| | Organization of supply and methods of supply control | K7 | |
| | HRM | K8 | |
| | Change management | K9 | |
| | Conflict management | K10 | |
| | Functioning in the organization industry specification | K11 | |
| | The specificity of the industry of the organization functioning | K12 | |
| | Advisory and training market | K13 | |
| Functional competence | Drawing up QMS documentation | F1 | Kendall's W = 0,255; p=0,164 |
| | Analysis of information and formulating proposals for improvement activities | F2 | |
| | Organizing, chairing meetings | F3 | |
| | Conducting improvement activities | F4 | |
| | Organization of audits | F5 | |
| | Organization of training | F6 | |
| | Public speeches | F7 | |
| Personal competence | Active listening | P1 | Kendall's W = 0.252; p=0.136 |
| | Assertiveness | P2 | |
| | Consistency | P3 | |
| | Self-confidence | P4 | |
| | Openness | P5 | |
| | Influencing others | P6 | |
| | Analytical thinking | P7 | |
| | Critical thinking | P8 | |
| | Creativity | P9 | |
| | Communication skills | P10 | |
| | Cooperation | P11 | |
| | Diagnosing, naming and controlling emotions | P12 | |
| Values competence | Honesty | V1 | Kendall's W = 0.208; p=0.283 |
| | Patience | V2 | |
| | Perseverance | V3 | |
| | Respect | V4 | |
| | Responsibility | V5 | |
| | Reliability | V6 | |
| | Involvement in QM activities | V7 | |

For every group of indicators, i.e. (1) knowledge, (2) functional competences (3) personal competences and (4) values averaged statistics were calculated (see Table 8). Next, the Repeated Measures ANOVA was used to determine the significance of the relationship between groups. The received results (see Table 9) allow concluding that there are significant differences between the groups (because the *p*-value is smaller than 0.05).

**Table 8.** The basic descriptive statistics of groups of indicators

| The group of indicators | Average | Min. | Max. | Standard deviation |
|---|---|---|---|---|
| K | 4.40 | 3.75 | 4.83 | 0.38 |
| F | 4.43 | 3.43 | 4.86 | 0.53 |
| P | 4.55 | 4.10 | 4.80 | 0.29 |
| V | 4.78 | 4.33 | 5.00 | 0.34 |

**Table 9.** The results of ANOVA analysis

| | SS | Degree of freedom | MS | F | p-value |
|---|---|---|---|---|---|
| Absolute term | 494.6308 | 1 | 494.6308 | 941.0328 | 0.000001 |
| Error 1 | 2.6281 | 5 | 0.5256 | | |
| R1 | 0.5273 | 3 | 0.1758 | 5.4775 | 0.009595 |
| Error 2 | 0.4813 | 15 | 0.0321 | | |

Detailed differences were calculated by using Scheffepost-hoc test statistics (Table 10). Statistically, we can conclude that the highest-assessed value and group of traits is values competences, which is significantly higher-rated than knowledge and functional skills.

Knowledge, functional and interpersonal skills are comparatively high rated by experts. Finally, the Spearman correlation matrix was calculated (Table 11).

There are strong positive relationships between the features under consideration. We do not observe a relationship only between the values competences and knowledge**.**

**Table 10.**The results of the Scheffe's post-hoc test

| | | {1} | {2} | {3} | {4} |
|---|---|---|---|---|---|
| | | M=4.40 | 4.43 | 4.55 | 4.78 |
| 1 | Knowledge | | p=0.995767 | p=0.580408 | p=0.021000 |
| 2 | Functional competence | p=0.995767 | | p=0.714647 | p=0.032928 |
| 3 | Personal competence | p=0.580408 | p=0.714647 | | p=0.227420 |
| 4 | Values competence | p=0.021000 | p=0.032928 | p=0.227420 | |

**Table 11.**The Spearman correlation matrix

| | N | R Spearman | t(N-2) | p |
|---|---|---|---|---|
| Knowledge & functional competences | 6 | 0.840668 | 3.104669 | 0.036058 |
| Knowledge & personal competences | 6 | 0.840668 | 3.104669 | 0.036058 |
| Knowledge & Vvlues competence | 6 | 0.621059 | 1.584812 | 0.188187 |
| Functional competences & knowledge | 6 | 0.840668 | 3.104669 | 0.036058 |
| Functional competences & personal competences | 6 | 0.823529 | 2.903465 | 0.043965 |
| Functional competences & values competency | 6 | 0.840168 | 3.098387 | 0.036278 |
| Personal competences & knowledge | 6 | 0.840668 | 3.104669 | 0.036058 |
| Personal competences & functional competences | 6 | 0.823529 | 2.903465 | 0.043965 |
| Personal competences & values competence | 6 | 0.840168 | 3.098387 | 0.036278 |
| Values competence & knowledge | 6 | 0.621059 | 1.584812 | 0.188187 |
| Values competence & functional competences | 6 | 0.840168 | 3.098387 | 0.036278 |
| Values competence & personal competences | 6 | 0.840168 | 3.098387 | 0.036278 |

### 4.3. Discussion

Certain aspects particularly fascinating are worth noting. Taking into account the basic data:

- Relatively low evaluation of knowledge about studying the needs and customers satisfaction. Knowledge of the customers' needs is the basis for the functioning of the QMS, so the MR should be familiar with the methods of examination in this area. The thesis is proved among others by Parumasur and Govender' (2009), meanwhile, in our research was placed at the ninth place (out of thirteen).

- Relatively high rating was given to knowledge about change management. Considering the fact that this competence was directly preceded by knowledge about process management, and was immediately followed by knowledge of determining and monitoring goals, as well as the fact that knowledge of the standard ISO 9001 and the specific nature of the industry was regarded as more important than conflict management or personnel management, it can be assumed that change management was treated as knowledge related to improving processes (organizational aspect) rather than predicting reactions of employees or shaping the climate towards changes (psychosocial aspect). This conclusion is confirmed at the level of functional and interpersonal skills. When analyzing the results, we can notice not only the pursuit of improvement in organizations but also the assignment of meaning in this respect first of all to intelligence, the dominance of rational actions. The essential skills are related to analytic skills (F2, F4, F5, P1, P7, P3) rather than shaping interpersonal relations (F3, P12, P5, P10). We may come up with a presumption that there is a strong sense of responsibility for QM by MR, while at the same time, this role is treated as an individual rather than teamwork role. It gives rise to questions as: does this affect the decision-making process? Is this tantamount to autocratic management? Does it limit cooperation? By comparing the results concerning two personal skills, i.e. assertiveness and openness (P5), it seems that the MR makes decisions independently, although he previously consults the employees. Similar results were obtained by Parumasur and Govender (2009). It may be noticed that there is a necessity to develop this kind of competence.

- The dominant role is assigned to honesty. It is the only examined competence, which was granted the highest grade by all the respondents. A similar significance of this competence was demon-strated by the analyses of Luo et al. (2016) for the second stage of becoming the head nurse. It is called „the running-in and stable phase" and concerns interpersonal relations. Having considered it with our research results, it seems probable that Polish managers are conscious that the functional knowledge and skills are significant, while they intuitively (subconsciously) notice the interpersonal relations.

- Relatively low place of knowledge about ISO standards from the 9000 series (beyond ISO 9001 standard). This competence obtained the lowest grade from among all 39 examined issues. This result may prove that the respondents have no knowledge of the other standards (e.g. ISO 9004, ISO 19011, etc.) or

do not think of their content as particularly useful.

However, taking into account the results of the statistical analysis, it is necessary to pay attention to:

- The group of values competence, which is significantly higher assessed than knowledge and functional skills and (b) comparability of group assessment: knowledge, functional skills, and interpersonal skills. It is worth noting that attitude is a component of competence, belonging to the "man", associated with its characteristics, personality. For this reason, it is difficult to change it, or - in contrast to other groups - to develop in the short term. Thus, managers can be recommended to include the verification of attitudes in the recruitment process.

- Disapproved less graded competences, i.e. knowledge about the consulting and training market in the field of quality management, openness to others manifested among others in accepting facts based criticism, recognizing, naming and controlling emotions (own and other people) and patience. In the case of knowledge, the difference of opinions may result from the ease of access to this type of information. In the case of skills, can it arise from the difficulty of shaping it? Complexity? Or maybe the specifics of national culture?

## 5. Conclusions

This paper makes an original contribution to determining the competence model of the MR by emphasizing the importance of attitudes, with honesty playing the dominant role, and the need to develop interpersonal competences. The information presented therein may be useful mostly for the managers of the organizations which are going to implement the ISO 9001 quality management system. Basing on the results, they may accurately assign the right person to be responsible for the system's functioning. Moreover, the conclusions resulting from the research can be successfully implemented in organizations which have already been certified with ISO 9001. According to the data provided by the International Organization for Standardization in 2017, the system of quality management was implemented in 1 058 504 organizations worldwide (www.iso.org). They all appoint a Management Representative or a person who is in charge of these responsibilities. The results of our research may also be of interests for the organizations implementing or already having management systems similar to QMS, i.e. based on standards such as ISO 14001 (environmental management system), ISO 50001 (energy management system), ISO 22000 (food safety management system), ISO 27001 (information security management system), ISO 28000 (security management system for supply chain), etc. as they also expect the assignment of Management Representatives, and the scopes of their activities are very close to those in QMS. It is important to remember that beyond the management systems based on the standards published by the International Organization for Standardization, there are also systems which follow guidelines prepared by other organizations. A good example is VDA 6.1. Quality Management for the Automotive Industry, which directly requires assigning a Management Representative in an organization. Therefore it may be assumed that the Management Representatives community includes over 1,5 million people, and the quality of their activities has a direct influence on the achievements of the organizations which employs them.

The conclusions presented in the article may be additionally useful for universities and training companies organizing courses on quality management.

These findings should be assessed with precaution and care as the study has some

limitations. Firstly, the study was conducted among experts in QM, so analysis includes opinions, which could result in obtaining a biased depiction of reality. For instance, when a given MR did not know one of the standards, he/she could claim that knowledge about it is not necessary for the satisfactory performance of this function. Furthermore, the request for research was directed to all organizations that received the prize- there were 6 in 2014 and 4 in 2015. Perhaps the other organizations, not participating in the research, had a different view of the analyzed topic. It is necessary to notice, because of the limited and deliberately chosen sample, the obtained research material is not representative. However, it can be the basis for the initial exploration of the problem, its description and provides a basis for formulating hypotheses that will be subject to verification in the future.

Secondly, due to the five and not the seven point Likert scale, the lower reliability of the research cannot be excluded. However, taking into account the respondent's perceptual skills, their subjectivity may be regarded as reduced. The use of a questionnaire with closed questions could result in a lack of consideration of relevant answers. To prevent this, the answer "other" was added. However, the respondents did not use the opportunity to express themselves.

Thirdly, to explain the research problem, a conceptual framework was used, which was created based on theoretical analyses. There have been some limitations in the subject literature in this area - there are studies on competence or quality management, but not together as competence in quality management. Thus, it is impossible to compare the obtained results and the presented conclusions from Polish organizations with similar studies.

Future research could cover a bigger test sample, include the special character resulting from the diversity of the surveyed organizations, as well as education, experience, and occupation of MR covered by the study. The critical challenge will be carrying out studies concerning the change of the Management Representative's situation resulting from an organization adjustment to the requirements of ISO 9001:2015. There is a widespread belief that the document requires new approaches and competencies for MR or person/people fulfilling the task (Fonseca et al., 2017b). It may be expected that expanding the range of the requirements for the quality management system (e.g. including issues concerning risk management) significantly will cause the need to expand the competences of the MR. However, removing the need to appoint The MR function may weaken their situation in an organization at the same time.

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**Marta Moczulska**
University of Zielona Góra,
Zielona Góra,
Poland
m.moczulska@wez.uz.zgora.pl

**Piotr Rogala**
Wroclaw University of
Economics and Business,
Wrocław, Poland
piotr.rogala@ue.wroc.pl

**Annex.** The relations between the tasks and the competences

| Competences | Tasks | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T1 | T2 | T3 | T4 | T5 | T6 | T7 | T8 | T9 | T10 | T11 | T12 | T13 |
| K1 | | X | X | X | X | X | | X | X | | | | X |
| K2 | | X | X | X | X | | | X | X | X | | | X |
| K3 | | | | | | | | | X | | | | X |
| K4 | | | | | X | | X | | X | | | X | |
| K5 | X | | | | X | X | X | | X | X | | X | X |
| K6 | | X | X | X | | X | | X | X | | | | X |
| K7 | | | | | | | | | X | | | X | |
| K8 | | X | X | X | | X | X | X | X | | | | |
| K9 | | X | | X | X | | | X | | | | | |
| K10 | | | X | | | X | X | X | X | | | | |
| K11 | X | X | | X | X | | | | X | X | X | | X |
| K12 | | X | | | X | | | | X | X | X | | X |
| K13 | X | | | | | | | X | | X | | | |
| F1 | | | X | | X | | | | X | | | X | X |
| F2 | X | X | | | X | X | | X | X | X | | X | X |
| F3 | | X | X | X | X | X | X | | X | | | | |
| F4 | | X | | X | | | | X | X | | | | X |
| F5 | | | | | | X | X | | X | X | | X | |
| F6 | X | | | | | | X | X | X | | | | |
| F7 | | X | | X | | | | X | X | X | | | X |
| P1 | | | X | | | | X | X | X | X | | | |
| P2 | | X | | | | | | | X | | | | |
| P3 | X | | | | | X | X | | X | X | | | |
| P4 | X | X | | | X | | | | X | X | X | | |
| P5 | | | | | | | X | | | X | | | |
| P6 | X | | X | X | | | | X | X | | | | X |
| P7 | | | X | | X | X | X | X | X | X | | | X |
| P8 | X | | | | X | | | X | X | | | | X |
| P9 | | X | | X | | | X | X | X | X | X | | |
| P10 | | | X | | X | X | X | X | X | X | X | | X |
| P11 | X | | | X | X | | | X | X | X | X | | X |
| P12 | | | | X | | X | X | X | X | | | | |
| V1 | | | | | X | | X | | X | X | | | |
| V2 | | | X | X | | X | | X | X | X | | | X |
| V3 | | X | X | X | | X | | X | X | | | | X |
| V4 | X | | | | X | X | X | | X | X | X | | X |
| V5 | X | | | X | | | | | X | X | | X | X |
| V6 | X | X | | | | X | | X | X | X | | | X |
| V7 | X | X | X | X | X | X | X | X | X | X | X | | X |

Key:

T – see explains in point 4.1.

K,F,P,V – see Table 2

*M.Moczulska, P.Rogala*